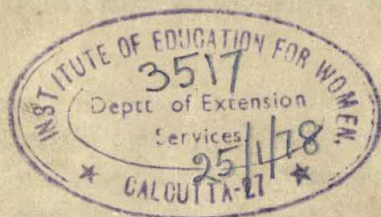


ECONOMICS

AN INTRODUCTION TO ITS BASIC PRINCIPLES

Micro and Macro



By

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Mitra

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PREFACE TO THE NINTH EDITION

Like the previous ones, in the present edition too, most of the chapters have been revised and re-arranged. Some new topics and exercises, selected from the latest examinations, have been included.

Students will find in the book all topics included in the syllabuses prescribed for the papers on Economic Theory in the B.A. and B.Com. degree courses of Indian Universities and in Professional Examinations.

I am grateful to the professors of this subject in the different colleges.

I thank Sri Prakash Chandra Bhattacharjee and Sri Sripati Bhattacharjee of the World Press and the printers, the Basusree Press for quick publication of this edition under many adverse circumstances, especially the difficulty of getting paper. I am indebted to Mrs. Eva Mitra, B.A. for helping the revision of this edition. I thank Sri Manindra Ghatak of the World Press for good management of the proofs.

1st January, 1975

J. K. M.

PREFACE TO THE FIRST EDITION

The object of this book is to state the salient features of modern economic theory in a concise form, so that students may grasp the main ideas quickly. References for further study and exercises have been given at the end of each chapter.

June, 1958

J. K. M.

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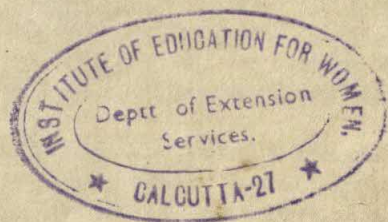
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PART I

Production—Consumption—Value
Distribution—Economic System
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CHAPTER 1

DEFINITIONS

WHAT IS ECONOMICS ?

Definition of Classical Economists. The founders of Economics, Adam Smith, John Stuart Mill and others defined Economics as, "the Science of Wealth". This definition was too *materialistic*. Apparently it made wealth more important than man for whose use wealth is produced. This led to criticisms from philosophers and humanitarians. (See p. 4).

Definition of Alfred Marshall. Towards the end of the nineteenth century, Alfred Marshall of Great Britain evolved a new definition which shifted the emphasis from wealth to man. "Political Economy or Economics is a study of man's actions in the ordinary business of life. It enquires how he gets his income and how he spends it." Thus, according to Marshall, Economics is a study of a part of man's actions. Human beings undertake many different kinds of activities, social, religious, athletic etc. Economics is not concerned with all of them. It is concerned with only those activities which relate to the earning and spending of income. By such activities men acquire, "the material requisites of well-being". Economics is therefore, "on the one side, a study of wealth and on the other, and more important side, a part of the study of man".

For a long time Marshall's definition was generally accepted as adequate. It was, however, not a *precise* definition. It made the scope of Economics too elastic. Also, it did not show why economic activities are undertaken. Nowadays it is thought that scarcity is the major cause of all economic problems. This aspect of Economics was not emphasised by Marshall. (See p. 5).

Definition of Robbins. During the early thirties of the present century Lionel Robbins, of the London University, put forward a more precise definition of Economics. According to Robbins, "Economics is the science which studies human behaviour as a relationship between ends and scarce means which have alternative uses". This definition makes Economics a study of 'means' and 'ends'. The 'means' or resources, available for the attainment of the objectives of human life, are scarce *i.e., in short supply relative to the demand*. How men use the scarce means to fulfil their desires, is the subject matter of Economics. The definition of Robbins can be analysed as follows :

1. *The 'ends'*. Human activity comes from the desire to secure certain 'ends' (or objectives) like food, clothing, shelter etc. The ends provide the motives for human activity. There are many possible ends. All the ends are not of equal importance. Some are desired with greater intensity than others.

2. *The 'means'*. The 'means', available to human beings for the achievement of the 'ends', are scarce. Desirable goods and services do not exist in sufficient quantities to satisfy everybody. The time available for pursuing the ends is also limited. "Life is short. Nature is niggardly."

3. *Alternative uses*. The 'means' have alternative uses, *i.e.*, they can be used for different purposes. A man can use his labour for producing foodstuffs or for painting a picture. The scarcity of means forces men to choose between different means with a view to adjust the available means to the desired ends.

According to Robbins, scarcity of means to satisfy ends of varying importance is the characteristic feature of human life. Scarcity creates certain problems. Economics is the science which deals with these problems. It is concerned with the forms assumed by human behaviour in the disposing¹ of scarce means or the allocation² of scarce resources. Economics should therefore be defined *in terms of scarcity* and not in terms of wealth or in terms of welfare.¹

Criticisms of Robbins' definition. Critics have pointed out that the definition of Robbins is inadequate in certain respects. Some of the criticisms are mentioned below.

1. *Cairncross*. The definition of Robbins ignores the social character of economics. The economist is not concerned with individual behaviour or with individual ends unless and until the individual's acts have consequences on other peoples' behaviour or ends. The problems of an isolated individual, like Robinson Crusoe, are of no

¹ The following quotation from Robbins explains his views:

"From the point of view of the economist the conditions of human existence exhibit four fundamental characteristics. The ends are various. The time and the means for achieving these ends are limited and capable of alternative application. At the same time the ends have different importance. Here we are, sentient creatures with bundles of desires and aspirations, with masses of instinctive tendencies all urging us in different ways to action. But the time in which these tendencies can be expressed is limited. The external world does not offer full opportunities for their complete achievement. Life is short. Nature is niggardly."

"The material means of achieving ends are limited. We have been turned out of Paradise. We have neither eternal life nor unlimited means of gratification. Everywhere we turn, if we choose one thing we must relinquish other which, in different circumstances, we would wish not to have relinquished. Scarcity of means to satisfy ends of varying importance is, an almost ubiquitous condition of human behaviour"—Robbins. *The Nature and Significance of Economic Science*, p. 12.

importance to the citizen of the modern world. Cairncross² suggests that, to emphasise the social character of Economics, the definition of Robbins should be modified as follows : "Economics is a social science studying how people attempt to accommodate scarcity to their wants and how these attempts interact through exchange."

2. *Boulding*. Boulding³ points out that Robbins' definition makes the jurisdiction of Economics too narrow. According to him, Economics is not merely a study of scarce means but also of human welfare, for welfare is an end in itself.

3. *Robertson*. According to Robertson,⁴ the definition of Robbins is "at once too narrow and too wide". It is too narrow because it excludes from Economics the study of organisational and managerial defects. Such defects lead to under-employment of resources but they are not caused by scarcity of means. On the other hand the problem of allocation of scarce resources is one which may arise in fields not generally included within the scope of economics. For example, the army commander in a battle or a cricket captain arranging his field may suffer from scarcity of "resources". If Economics is defined in terms of scarcity alone then topics like the above will come within the jurisdiction of Economics and its scope will become too wide.

Conclusion. In spite of its inadequacies, the definition of Economics as given by Robbins, has become very popular. Most modern economists use his definition or some variant of it.

Stonier and Hague⁵ observe that, "Economics is fundamentally a study of scarcity and of the problems to which scarcity gives rise".

According to Samuelson,⁶ "Economics is the study of how men and society end up *choose*, with or without the use of money, to employ *scarce* productive resources which could have alternative uses to produce various commodities and distribute them for consumption, now and in the future, among various people and groups in society. It analyzes the costs and benefits of improving patterns of resource allocation".

In a recent publication the following observation is made. "How to get more and how to make the best use of what is available is the economic problem, the everlasting problem of every family, every business firm, and every unit of government".—Watson.⁷

2 Cairncross, *Introduction to Economics*, Ch. 1.

3 Boulding, *Economic Analysis*, Ch. 1.

4 Robertson, *Lectures on Economic Principles*, Vol. I., p. 23.

5 Stonier & Hague, *A Textbook of Economic Theory*, p. 3.

6 Samuelson, *Economics* (9th edition), Ch. 1.

7 Watson, *Price Theory and Its Uses*, (1968).

IS ECONOMICS A STUDY OF MONEY ?

Some economists are of opinion that it is more realistic to define Economics in terms of money. Thus Cairncross⁸ observes that, "Economics studies the part played by money in human affairs".

Following Robbins, Cairncross argues that there are three fundamental problems which face mankind. The first is "Scarcity". The good things of life, things that people want, are not available in quantities sufficient to satisfy everybody. "We cannot have more of all simultaneously." The fact of scarcity gives rise to the second problem, viz., that of "Choice". Men must choose between the many claims on their resources and between the many uses to which their time and energy may be put. The third problem before mankind is that of "Exchange". To get maximum returns from the existing resources men have to specialise i.e., adopt different activities. One man becomes an agriculturist, another a carpenter, and so on. They have to exchange one another's products. Hence, specialisation necessarily leads to exchange.

It is necessary to use money for the purpose of tackling the problems of Scarcity, Choice and Exchange. All modern communities do so. Nowadays, money is the instrument through which the choice between, and the exchange of, scarce things take place. Economics can therefore be broadly defined as the science which deals with those aspects of human behaviour (exchange, choice and scarcity) which involve the use of money and which can be measured in terms of money.

This definition is open to the objection that too much emphasis on money is misleading. Human beings are more concerned with goods and services which money can buy, than with money itself. Money is merely a medium of exchange and the measure of value. It is only an instrument used for facilitating human activity for the furtherance of human happiness. There are many other instruments used for the same purpose. Economics should not be defined in terms of a particular instrument like money but in more general terms with reference to human activity.

ANALYSIS OF THE DEFINITIONS OF ECONOMICS

I. The Classical School. Adam Smith, John Stuart Mill etc. Economics : A Study of Wealth.

Adam Smith, generally regarded as the father of scientific economics, defined Economics as, "a study of wealth". His book, pub-

⁸ Cairncross, *Introduction to Economics*, Ch. 1.

lished in 1776, was entitled, "An Enquiry into the Nature and Causes of the Wealth of Nations". According to Adam Smith, the acquisition of wealth is the main objective of human activity. Therefore it is necessary and important to study how wealth is produced and consumed. This is the subject matter of Economics.

The definition of Economics by John Stuart Mill was almost identical with that of Adam Smith. According to Mill :

"Writers on Political Economy profess to teach or investigate the nature of wealth and the laws of its production and distribution."

The emphasis on wealth by the early writers on Economics was severely criticised by many people. Carlyle, Ruskin and other philosophers called Economics, defined in terms of wealth, the "Gospel of Mammon" and the "Dismal Science". The criticisms were mainly on two points :

- (i) The assumption that human beings are guided by the desire to acquire wealth is incorrect. A man who is always guided by the wealth-motive may be called an "Economic Man". But the average man is not an Economic Man in this sense. The actions of the average man in a civilized community are determined by many motives (including, of course, the motive of acquiring wealth). Human behaviour cannot be properly analysed unless the other motives are taken into account.
- (ii) Wealth, in the popular sense, means money or riches. The philosophers argued that money and riches are not subjects worthy of study by cultured persons.

To avoid the criticisms of the philosophers, Marshall defined Economics in such a way as to give more emphasis upon man than upon wealth.

II. The Neo-Classical School. Alfred Marshall. Economics : A Study of Man.

According to Marshall, Economics is not concerned with wealth as such, but with the use of wealth by man. Wealth, in the sense of desirable goods, is necessary to satisfy human wants. Men have to work and sacrifice in order to secure wealth because the supply of wealth is scarce in relation to requirements. In Economics we study, not wealth, but the activities of men concerning the production, consumption, exchange, and distribution of wealth. Activities concerning the aforesaid matters may be called Economic Activities. Economic activities possess one common characteristic, *viz.*, they can be measured by money. In Economics we are primarily concerned with those activities

which originate from and are related to the motives of wealth-getting and wealth-using and which are measurable in terms of money.

Marshall emphasised that while analysing economic activities we must keep in view the following facts :

- (i) Economic activities constitute only a part of human activities. Men have other activities also, e.g., social, religious and cultural activities.
- (ii) The motive of acquiring wealth is only one of the large number of motives which guide and determine human action. It is improper to assume, as the Classical Economists did, that human beings have only one motive of action, viz., the desire to acquire wealth.

Some quotations from Marshall :

Economics, "examines that part of individual and social action which is most closely connected with the attainment and with the use of the material requisites of well-being. Thus it is on the one side, a study of wealth and on the other, and more important side, a part of the study of man." Marshall, *Principles of Economics* (1890).

Economics deals with, "man's efforts to supply his wants, in so far as the efforts and wants are capable of being measured in terms of wealth, or its general representative, money." Marshall, *Ibid*.

"Political economy or economics is a study of man's actions in the ordinary business of life. It enquires how he gets his income and how he spends it." Marshall, *Economics of Industry* (1892).

Marshall's view of the nature of economics, as it appears from the lines reproduced above, can be summarised as follows :

- (i) Economics is a study of human activities relating to the acquisition and use of wealth.
- (ii) Such activities are capable of being measured in terms of money.
- (iii) Economics is a social science as it deals with the activities of men in organised societies.
- (iv) We are not to assume that men are always guided by self-interest.

III. The new definition. Robbins : A Study of Scarcity.

Marshall's definition removed from Economics the taint of gross materialism for which it was condemned by the 19th century philosophers. But the definition was somewhat vague. It did not sufficiently emphasise the problem of allocation of scarce resources which is the

fundamental problem of modern economics. For this reason many economists prefer the definition of Robbins. (See p. 1).

THE SCOPE OF ECONOMICS

There are different views regarding the scope of economics. According to Pigou, "Economics is a positive science of what is and tends to be, not a normative science of what ought to be". This view narrows the field to study of Economics too much. It is sometimes impossible to discuss "what is" without a reference to "what ought to be".

To determine the scope of Economics we must refer to the objectives of studying economics. It was Marshall's firm conviction that, "economic science is chiefly valuable neither as intellectual gymnastic nor even as means of winning truth for its own sake, but as a hand-maid of ethics, and a servant of practice".⁹ From this it follows that Economics is concerned not simply with a theoretical analysis of economic phenomena but also with the practical applications of such analysis. Economics is not only "light-bearing" but also "fruit-bearing".

Modern economists believe that it is not proper to limit the scope of Economics to a narrow field. The boundaries of a science ought to be kept elastic. Thus Samuelson¹ observes as follows :

".... logically there is nothing fundamental about the traditional boundaries of economic science. In fact, a system may be as broad and as narrow as we please depending upon the purpose at hand ; and the data of one system may be the variables of a wider system depending upon expediency. The fruitfulness of any theory will hinge upon the degree to which factors relevant to the particular investigation at hand are brought into sharp focus."

In a monograph² on the subject, Prof. Pigou observed that economic analysis is not merely a description of events in space time. "The function of economic analysis—at least that part of it which is not tool-making—is to build as far as may be, conceptual working models of the body economic as it lives and moves ; to display its anatomy and physiology ; the interaction of its several parts ; the process of its growth ; the response it tends to make to various kinds of stimulation ; and so on. It is also elucidation of facts from the standpoint of causation." (Pigou).

Economic problems. It is possible to state the scope of economic studies in more specific terms. Economics deals with problems relating to the consumption, production, exchange and distribution of wealth.

⁹ Pigou, *Memorials of Alfred Marshall*, p. 84.

¹ Samuelson, *Foundations of Economic Analysis*, p. 9.

² Pigou, *Functions of Economic Analysis*.

Economists discuss how efficiency of production can be increased ; what are the causes of low productivity, depression, unemployment and poverty ; and what steps can be taken for the removal of these evils from the economic system. In addition to all these questions, economics also discusses theoretical matters like determination of the value of commodities, the volume of employment, the determinants of economic growth etc.

[Basic Economic Problem and Social Production-Possibility Frontier—See Ch. 23.]

SHOULD ECONOMICS BE NEUTRAL BETWEEN ENDS ?

According to Robbins, Economics studies that aspect of human behaviour which arises from the scarcity of means to achieve *given ends*. From this it seems to follow that the economist is not concerned with the ends as such. His function is only to analyse how the given ends are to be achieved with the available scarce means. In other words economics should be *neutral* between *ends*. A subject like Ethics or Aesthetics is concerned with ends as such, but not Economics. Robbins argues strongly in favour of limiting the scope of Economics in this fashion.³

The view of Robbins is true for the purely analytical part of Economics. For example, when discussing the theory of consumer behaviour the economist is not concerned with the morality or legality of the consumer's desires. He is only concerned with the question how the consumer spends his income on his various purchases. When discussing the theory of value, the economist explains the factors on which the value of an article depends. It is not his business to pass judgment on the aesthetic qualities or the moral values of the different articles in the market.

But there is no reason why the boundaries of economic science should be rigidly limited to pure theory. Economics is a social science. Therefore, economists should be allowed to make value judgments about the ends of human activity. When discussing a particular problem the ends may be taken as given. But economists should also discuss the welfare implications of the given ends. How to increase welfare (of the individual and of the group) is also a subject matter of economic studies. The scope of economics has been interpreted in this wide sense by most of the great writers on the subject (e.g., Marshall, Pigou and Keynes).

ECONOMIC MOTIVES

The Rationality Assumption. The earlier writers on Economics, Adam Smith, Ricardo and others based their theories on the assump-

³ Robbins, *ibid.*, Ch. II.

tion that human beings *desire pleasure and dislike pain*. This principle they derived from the school of psychology known as Hedonism and Utilitarianism. The acceptance of utilitarianism led to the concept of the Economic Man. An Economic Man is one whose actions are determined by a calculation of *material gain*. The Classical Economists believed that rational behaviour meant acting as an Economic Man. They therefore assumed that businessmen always sought maximum profits and consumers always sought maximum satisfaction. This principle is sometimes referred to as the Rationality Assumption.

The Economic Man. In modern times the concept of the Economic Man is believed to be unreal. Experience shows that man's actions are not always selfish. Desire for other men's good also plays a part in guiding his conduct. Moreover man is not a calculating machine. Very often his actions are based, not on a rational estimate of probable gain, but on emotion and on sudden impulses.

Modern writers distinguish between two types of motives—economic and non-economic. The economic motive may be defined as the desire to get maximum gain or maximum satisfaction, *i.e.*, getting the greatest gain at the least cost. Other motives (*e.g.*, religious or social) are called non-economic motives. Human conduct is influenced by both kinds of motives, but the former is more important in economic affairs. In business decisions the economic motive plays the dominant part but non-economic motives exist and have an influence. The business man does not always behave as an "economic man" but in most cases his actions are based on the desire to make the maximum possible gain.

The Maximiser. Stigler⁴ points out that the concept of a "maximising individual" is "indispensable if economic phenomena are to be treated scientifically". According to him the concept of the 'economic man' does not necessarily mean "that the individual seeks to maximise money or wealth" or that "the human soul is a complex cash register". All that the concept implies is that there is some motive behind every human action and that we can argue logically about the consequences of those actions only if we assume that the motive is to get the maximum of 'something'. In economic activity that 'something' is usually maximum gain in terms of money. The conclusions of economic analysis will hold good if we substitute for money some other objective to be maximised. As an example, Stigler remarks that, "it does not affect the formal theory of demand in the least whether the individual maximises wealth, religious piety . . . or his waistline".

⁴ Stigler, *Theory of Price*, p. 64.

NATURE OF ECONOMIC LAWS

There are various kinds of "laws". A 'moral' law states what men ought to do or ought not to do; a 'statutory' law lays down rules of conduct enforceable by courts while a 'physical' or 'natural' law states the effects of natural forces operating under given conditions. The laws of economics do not come under any of the aforesaid categories. Economic laws are not moral or statutory laws. They are not physical laws because they do not deal with inanimate nature. They deal with human behaviour. Marshall said that economic laws lay down what men are likely to do under given conditions. They are statements of tendencies in human behaviour.

Economic laws have the following characteristics :

1. *Not commands.* Economic laws are not orders of the State and are not commands. They should be phrased in the Indicative Mood and are not in the Imperative Mood.

2. *Not exact.* Since economic laws deal with actions of human beings having free will, they are *not as exact* as the laws of the natural sciences. They are statements which are true only in general. For example, the statement that men will buy goods at the cheapest available market, is true generally but not universally. A man intentionally pay a higher price to help a relative or friend; but such cases form a small fraction of the total transactions of human beings. Economists tacitly ignore these exceptional cases and frame their laws on the expectation that men's action will, in the great majority of cases, follow a uniform pattern. This makes economic laws generally true, but less exact than physical laws. "Economic laws are probability laws, not exact relationships." "Abnormal as well as normal patterns of probabilities occur in economics."—Samuelson.⁵

3. *Statements of Cause and Effect.* Economic laws, like scientific laws, are statements of cause and effect. They attempt to state the effects that will follow from particular causes. Unfortunately in economic affairs many factors operate simultaneously and it is impossible to isolate each factor to find out its effects separately. The qualifying clause "other things remaining the same" (*ceteris paribus*) is used to get over this difficulty. But in economic life other things generally do not remain the same. Hence, economic laws are never exact enough to enable accurate predictions or prophecies being made.

4. *Predictions are difficult.* As regards making predictions the following example may be noted. The simple and exact laws of gravitation enable astronomers to make accurate forecasts. But in the case of tides, the level of water depends on so many factors (*e.g.*, strength of the attracting force, geographical features of the country etc.) that

⁵ Samuelson, *Economics* (9th Edition), p. 12.

it is impossible to forecast the level accurately. Marshall therefore says, "The laws of economics are to be compared with the laws of tides rather than with the simple and exact laws of gravitation".

5. *They are hypothetical.* Economic laws are also *hypothetical*, i.e., they are conclusions drawn from certain assumptions or hypotheses. But in this, economic laws do not differ from other scientific laws. The laws of science also start from certain hypotheses and deduce certain consequences.

6. *There are some physical laws.* Some laws dealt with in books of economics deal with inanimate nature, e.g., the Law of Diminishing Returns. They are laws borrowed from other sciences.

METHODS OF ECONOMICS

Deduction and Induction. The usual methods of scientific studies—deduction and induction, are available to the economist. The deductive method involves reasoning from a few fundamental propositions, the truth of which is assumed. The inductive method involves collection of facts, drawing conclusions from them and testing the conclusions by other facts. The classical economists of the 19th century (J. S. Mill and others) used the former method. The Historical School used the latter. The methods used by statisticians come within the category of induction.

The deductive method, as used by modern economists can also be described as the method of "Intellectual Experiment".⁶ Conditions and postulates which are simpler than reality are first assumed and the consequences are worked out. Gradually more and more complex assumptions are introduced until reality is approached.

Mathematical method. The so-called mathematical method is not a separate method. Mathematics is only a tool which facilitates reasoning. It can be used in both deduction and induction. The chief advantages of the use of mathematics are (i) the assumptions made are kept clearly in view and (ii) conclusions can be drawn more quickly than by verbal methods. The chief disadvantages are (i) it creates a tendency towards oversimplification of economic problems and (ii) it is apt to become an intellectual toy, leading people to discuss imaginary problems rather than real ones.

In the natural sciences, the inductive method is very important and is applied in two ways (i) by experiments and (ii) by collection of statistics. The experimental method has been very fruitful in chemistry, biology and other sciences but it cannot be applied in economics except in narrow limited fields. The economist therefore uses the

⁶ Boulding, *Economic Analysis*, Ch. I.

statistical method. This consists in collecting figures regarding economic phenomena. The figures may be used to prove or disprove proposition derived theoretically or to correlate different phenomena and draw conclusions. The statistical method should be used with caution because (i) statistics are in many cases faulty and (ii) co-relation is not causation : if two facts appear together we cannot conclude that one causes the other ; all that we can say is that there is a possibility that they may be so connected. Statistical studies have thrown much light on trade cycles and monetary theory.

Intellectual Experiment. Different methods are appropriate to different branches of economics. The method of "Intellectual Experiment" is very suitable for the theory of value, while in trade cycle theory, inductive and statistical methods are appropriate. Thus both deduction and induction are useful in economic studies. "Induction and deduction are both necessary for science as the right and the left feet are needed for walking". (Marshall).

Assumptions usually made in Economic Analysis. When discussing particular problems economists find it necessary to make various assumptions. For example, in demand-analysis certain assumptions are made regarding consumer behaviour and in price-analysis certain assumptions are made regarding the behaviour of firms, the quality of the products etc. What assumptions are to be made depends upon the scope of the discussion and the nature of the problem.

The assumptions usually made in economic analysis can be divided into three types as follows :

1. *Assumptions regarding human behaviour :* It is generally assumed that producers try to maximise their money-income and consumers try to maximise their satisfaction. These assumptions are valid in the majority of cases.

2. *Assumptions regarding facts of nature :* The economist has to assume the truth of natural facts and events as described in scientific textbooks (e.g., in Geography or Biology).

3. *Assumptions regarding economic and political institutions :* The conclusions of economic theory vary with the institutional framework assumed. For example, price theory depends upon the market structure and the industrial organisation existing in a particular country at a particular time. The economist must assume a particular institutional framework.

ECONOMICS AND OTHER SUBJECTS

Social Science : The term Social Science is used to denote any subject which deals with human behaviour. Political Science, Psychology, Ethics etc., come within the definition of Social Science.

Economics is a social science because it deals with one aspect of human behaviour, viz., how men deal with problems of scarcity. Samuelson⁷ says that Economics is, "the queen of the social sciences".

Economics deals with human beings living in a society, i.e., in a large group of persons with touching interests and problems. It does not deal with problems of solitary individuals like Robinson Crusoe. In a community of people everybody is influenced by the actions of the others. Economics deals with the activities of people, living in an organised community or society, in so far as such activities are related to the earning and use of wealth or with the problems of scarcity, choice and exchange. Economics is therefore considered to be a branch of sociology which is a study of the history and nature of society. As a consequence of this we find that economics is closely related to the other social sciences like Ethics, Political Science, History etc.

1. *Economics and Ethics* : Ethics deals with principles of morality while economics is a study of the behaviour of men in wealth-getting and wealth-using activities. But human behaviour is influenced by moral considerations. Men's actions are usually guided by their ideas of what is right and proper. Economics is therefore closely related to Ethics. Marshall believed that Economics is the handmaid of Ethics and the servant of Practice. The value judgments and policy recommendations of economists are influenced by ethical considerations. Students of economics should therefore have knowledge of ethics.

2. *Economics and Political Science* : Political science is a study of Government and citizenship. Political institutions affect economic life and economic activities influence the nature of the political institutions. There is a close correspondence between political development and economic growth. There are many topics which are studied in both Economics and Political Science, e.g., Public Finance. The two subjects are so closely related that many earlier writers treated economics as a branch of political science and called it, "political economy".

3. *Economics and Psychology* : Psychology deals with human behaviour. The classical economists derived some of their postulates (or fundamental assumptions) from a school of psychologists, called Utilitarians and Hedonists, who thought that the desire for gain was the principal motive behind human activity. Modern economists recognise the influence of impulse and other non-utilitarian motives. But the desire for maximisation of utility and maximisation of profit is still assumed to be the motive power guiding consumption and production.

4. *Economics and History* : History is a record of past events, including economic events. The economist of the present generation can learn much by a study of how men in the past dealt with economic problems, i.e., problems of scarcity, choice and exchange. Historical

⁷ Samuelson, *Economics* (9th Edition), p. 1.

facts can be used to formulate new theories regarding economic activity and to test their correctness. Some writers are of opinion that economic forces play the dominant part in the development of mankind. Study of history is therefore of great importance to the economist.

VALUE OF ECONOMIC STUDIES

According to Marshall "the aims of the study (of economics) are to gain knowledge for its own sake and to obtain guidance in the practical conduct of life". Economics is both "light bearing" and "fruit bearing". The study of Economics is useful for the following reasons :

1. *It is an intellectual discipline* : It teaches the student how to discuss economic problem logically. It facilitates clear thinking. A good economist can evaluate evidence. He knows what fact is relevant and what fact is not. The following lines of Keynes throw much light on the nature of economics. "The Theory of Economics does not furnish a body of settled conclusions immediately applicable to policy. It is a method rather than a doctrine, an apparatus of the mind, a technique of thinking, which helps its possessors to draw correct conclusions."⁸ According to Robertson⁹ the main practical object in undertaking the study of economics is the "formation of judgments".

2. *It teaches us the facts of economic life* : Economics deals with matters of every-day importance like money, banking, employment, industrial organisation, taxation and public expenditure. The citizen of a democratic state must be aware of the economic processes. He must also think of the crucial problems which face mankind, e.g., unemployment and poverty and of methods of tackling such problems. He can get knowledge of such things by reading books on economics. "You cannot," says Wootton, "be in any real sense a citizen unless you are also in some degree an economist". Henry Clay observed that, "Some study of economics is at once a practical necessity and moral obligation".¹

3. *It is useful to businessmen and professional people* : Knowledge of economics is bound to be of great help to the businessman because economists discuss problems with which businessmen are concerned. Every businessman is "in some degree an economist" because he knows or at least, should know the practical art of making money. He can know more about it if he studies economics. Knowledge of the mechanism of money, banking, international trade and

⁸ Keynes' Introduction to the Cambridge Handbooks on Economic Problems.

⁹ Robertson, *Lectures on Economic Principles*. Vol. I., p. 17.

¹ Henry Clay, *Economics for the General Reader*, p. 6.

foreign exchange will make the average businessman more efficient and better able to anticipate the future.

Conclusion. It is sometimes said that a man can earn money without knowing economics and therefore the study of economics is useless. To this argument it may be replied that a man may be a good musician without knowing anything about sound waves. Similarly a man may be a good businessman without knowing anything about economic analysis. But this is no argument either against the study of physics or the study of economics.

Economics discuss with important problems *e.g.*, unemployment, inflation, poverty and wealth. "Dry-as-dust principles take on a new luster under the touch of relevance." (Samuelson).

BRANCHES OF ECONOMICS

It is usual to divide the study of economics into the following parts :

1. *Production* : This part includes a study of the laws of production and the organisation of business and industry.

2. *Consumption* : In this part is studied the laws of consumer behaviour, *i.e.*, how people exercise their choice among various scarce goods.

3. *Exchange* : This part deals with the exchange of goods for one another. It includes a study of the principles by which relative values are determined and the mechanism through which exchanges take place, *viz.*, money, banking and international trade.

4. *Distribution* : In this part is studied the distribution of the income of the nation among the people and groups of people. It contains a discussion of the principles which determine the income earned by the factors of production and individual persons.

5. *Public Finance* : This part deals with the finance of the Government and local authorities. It studies how the Government and the local authorities, like municipalities, secure money for their various functions and how they spend it.

Some modern writers² prefer to divide the study of economics into three parts as follows :

1. *Descriptive Economics* : In descriptive economics the relevant facts about particular topics or particular economic subjects are collected together for purposes of study. Books on Indian Economics come within this category.

2. *Economic Theory or Economic Analysis* : This is the purely theoretical part of economics. It contains the laws, deduced or formulated by economists, regarding economic behaviour or the economic

² See Stonier and Hague, *op. cit.*

systems. The theory of consumer demand, theory of value etc. come within this part.

3. *Applied Economics* : In applied economics attempt is made to apply the results of Economic Analysis to Descriptive Economics. In this part the facts and events recorded in descriptive books are explained by economic analysis and suggestions are made as regards economic policy.

Statics and Dynamics. Pure economic theory may again be divided into two parts : Economic Statics and Economic Dynamics. The former deals with positions of equilibrium between economic quantities at a particular point of time. Economic Dynamics is concerned with the laws of change. It studies how economic variables at different points of time are functionally related. The definitions of the terms used above have been clarified by Hicks.³ "I call Economic Statics those parts of economic theory where we do not trouble about dating. Economic Dynamics are those parts where every quantity must be dated.... We pay special attention to the way changes in these dates affect the relations between factors and prices."

Examples : Problems in Economic Statics—temporary relationship between price and demand ; the law of diminishing marginal utility ; equilibrium relating to price ; output in a monopoly etc. Problems in Economic Dynamics—growth of population ; trade cycles ; quasi-rent ; economic growths etc.

MICRO-ECONOMICS AND MACRO-ECONOMICS

In economics we are concerned with two types of variables : (i) those relating to particular individuals or particular business units, and (ii) those relating to the economy as a whole. The income of a particular individual, the output of a particular firm etc. come within the first category. The total income, total output, and other aggregates relating to the whole economy come within the second category.

Some economists prefer to begin their analysis of economic problems from the variables concerning individuals, individual firms and individual industries. This approach is known as Micro-economics. Others prefer to begin their analysis from the broad aggregates or the national totals. This approach is known as Macro-economics. The greater part of Marshallian economics is concerned with micro-economics. The later works of Keynes (e.g., his "General Theory of Employment, Interest and Money") relate to macro-economics.

The two approaches are complementary. For adequate discussion of economic problems the micro and the macro view of economic life are both necessary.

³ Hicks, *Value and Capital*.

DEFINITIONS OF SOME ECONOMIC CONCEPTS

Utility. In the popular and ordinary sense, utility means usefulness. But in economics utility is defined as, "the power to satisfy a human want". Any commodity or service which can satisfy a human want, is said to have utility. 'Want' in this context means 'desire' and has no ethical or legal implication. Anything (and any service) which is desired by a human being is considered to have utility even if the desire to be satisfied is illegal or unethical. (See Ch. 8).

Goods. The term 'goods', is used in economics to describe anything which has 'utility' as defined above, e.g., air, water, rice. The term has no moral significance. A thing will be called "goods" even if it is required to satisfy a want which is morally bad, e.g., wine. Goods are of two types : Free Goods and Economic Goods. The former include goods which can be obtained without payment, e.g., air or seawater. The latter include goods which can only be obtained in exchange of other goods or which command other goods in exchange.

Wealth. Economic goods are also called wealth. To be wealth, goods must satisfy the following conditions :

- (1) It must have utility. An article having no utility does not come within the category of goods and is therefore not wealth.
- (2) It must be scarce. An article which is not scarce, e.g., air, is a free good and cannot be called wealth.
- (3) It must be transferable. An article which cannot be transferred to others, e.g., a musician's ability or artist's skill is not called wealth. A musician or artist may earn money by selling his product or service but he retains his skill. Such qualities are called personal capital and not wealth.
- (4) It must be external. Only things which are external to man can be transferred. Hence only such things are wealth.

Wealth may be *material or non-material*. The chief example of the latter type of wealth is the goodwill of a business which can be sold.

Individual wealth : This term is used to mean the sum total of all wealth possessed by an individual.

National Wealth or Social Wealth : This term is used to denote the sum total of the wealth of all individuals in a country plus property and other assets belonging to the state minus obligations due to foreigners. When adding up individual wealth care must be taken to avoid double counting. The term National Income has a different meaning.

Personal Capital. Marshall used this term to denote internal qualities (e.g., a musician's ability) which are not wealth because they

are not transferable but which are nevertheless valuable because they enable their possessor to earn an income.

Service. Service means an act performed by one person for the benefit of another. One can earn income by service. Since every service provides utility to the receiver we can say that service is a non-material good. The acts of a lawyer, doctor, musician or barber are non-material goods or services. When computing the national wealth or the national income both material goods and services must be included.

Firm. Firm means a particular production unit or a trading concern. A firm may have branches or several plants. There may be different branch-managers and plant-managers. If the final authority and the decision maker is the same body it will be called a single firm.

In Economics the term Firm is used in broad sense. Firm includes—factory, agricultural farm, any production unit and trading concern, whatever its organisation may be. Every Firm is supposed to be an income-producing unit.

Household. Consumers are governed by families consisting of adult persons, their children and the dependants. The theory of consumer-behaviour may be analysed on the basis of households. The household may also be a producing unit, *e.g.*, a family producing cottage goods.

“The economic unit for the purchase of the goods and services of everyday consumption is the household. It may contain only a bachelor buying for his own immediate needs, or a family with the wife or husband buying on behalf of all acquiring goods for the sustenance of the inmates. Irrespective of the size of the household, some individual must decide what goods to buy and how much to buy of them.”
—Ryan.⁴

Income. Income is the periodical return which one gets from ownership of Land and Capital and also from services given. Capital is a stock while income is a flow. When computing the national income it is usual to include the new capital asset produced during the period under consideration. Income, as stated above, may arise apart from ownership of Land and Capital. The workers, including professional persons, earn income through personal services.

National Income. The term National Income denotes the aggregate income of a country during a specified period, usually one year. See Ch. 17.

Commodity. Any material good may be called a commodity. Difficulty, however, arises when we seek to distinguish one commodity

⁴ Ryan, *Price Theory*, p. 1.

from another. Apparently rice is a commodity. But is 'Aman' rice the same commodity as 'Aus' rice? The answer is obviously in the negative. Therefore we must restrict the definition of a commodity to a particular quality or grade of a good. Joan Robinson⁵ defines commodity as, "a consumable good homogeneous within itself". The same idea may be expressed by saying that good becomes a specific commodity when it is *not easily substitutable* by another good. Consumable goods may be arranged in a series in order of substitutability. There will be breaks in the series at places where there is no substitutability. A good with a break on either side may be called a commodity. A commodity is, "a group of products, surrounded by a gap in the chain of possible substitutes."⁶

Production. Earlier writers like Adam Smith took a narrow view of 'production' and defined it as the "creation of material goods". This view is now rejected for, man cannot create matter. All that he can do is to rearrange matter so that it becomes useful. Production therefore should mean creation of utility. Marshall used the term production in this wide sense. It also follows that all labour creating utility is productive labour.

Some modern writers, however, narrow the definition of production by excluding from its scope activities which are difficult to evaluate or which do not enter into the ordinary transactions of the economic system (*e.g.*, the housewife's labour at home, or produce from a man's own garden which is not intended for sale). Thus according to Cairncross, "Production is the making of goods for sale or the rendering of paid services". According to Meyers, production is "any activity that results in goods or services intended for exchange".

It is to be noted that the term 'production' has no ethical connotation. An article may be morally bad (*e.g.*, wine), undesirable (*e.g.*, armaments) or sinful, but so long as it is wanted by men it must be considered to have utility and labour directed to its creation, must be called productive. According to Marshall "all labour is in a sense productive". According to Taussig only two types of labour are unproductive: (i) labour which fails to produce what it started out to do and (ii) labour of thieves and swindlers which merely transfers utility from one person to another.

Creation of utility may also be called rendering of service, for we get service not only from persons but also from goods. Cairncross therefore says "our efforts are productive if they are of service to some one. If they are not, then we may fairly call them unproductive".

⁵ Joan Robinson, *Economics of Imperfect Competition*, p. 17.

⁶ Meyers, *Elements of Modern Economics*.

Consumption. Just as production means creation of utility or service, so consumption means destruction of utility or service. We cannot consume matter; we only destroy utility or use up services. Some goods are consumed by a single use, *e.g.*, a cup of tea or a piece of cake. Some goods may be used many times over a period of time, *e.g.*, a house or a motor car. These are called Durable Goods.

Equilibrium. The concept of equilibrium has been introduced into economics from mathematics. It means a position of rest or balance. Economic forces are said to be in equilibrium when there is no tendency towards change. For example, when the price of a commodity is equal to its cost of production and its marginal utility to consumers, the output will ordinarily remain stable; neither the producers nor the consumers will find it profitable to change the quantity produced and consumed. This is a position of equilibrium.

Factors of production. Production requires the use of certain resources. Each particular resource may be called a Factor of Production. "Anything that contributes towards output is a factor of production." (*Benham*). For the sake of convenience it is usual to group all productive resources under four heads: Land, Labour, Capital and Organisation, each group being called a Factor of Production.

Land. The term "Land" is used in Economics to include gifts of nature.—See Ch. 2.

Labour. Labour means man's efforts.—See Ch. 2.

Capital. Capital includes those durable goods (made by labour at some period of time) which assist further production (*e.g.*, tools).—See Ch. 3.

Organisation. Organisation includes the labour of those specialists who (i) undertake the work of bringing together capital, land and labour and (ii) bear the risks inherent in every enterprise.—See Ch. 4.

It will be found that all productive work involves the use of these four factors in greater or less degree.

Is Organisation a separate factor of production? The fourfold classification of the factors of production has become traditional in economic theory. Many modern economists, however, consider that there are only three factors of production: Land, Labour and Capital; the fourth factor Organisation being only a form of labour. The principal reasons advanced for this view are as follows:

(1) Organisation means co-ordination and control of men and things. But every worker must have this ability in greater or less degree, otherwise he cannot produce. People having superior ability of organisation become managers, directors or promoters and earn

large incomes. People having less ability occupy subordinate positions and earn less. The difference in their earnings is not due to the possession of different types of ability but a greater quantity of the same ability. The difference is one of degree, not of kind.

(2) Organisation includes risk-taking. Risks are undertaken not only by the capitalist but also by every labourer. The capitalist risks his money but the labourer (*e.g.*, a steeple-jack or coal-miner) risks his life. He also risks unemployment, bad health etc. So there is no difference in kind between the director of a company and the humblest labourer.

(3) Qualities like steadiness, punctuality or obedience are as much essential to production as organisation and risks-taking. There is no reason why only organisation should be treated as a separate factor and not the others.

(4) Every type of labour requires judgment, skill and the ability to take decisions. A motor driver in a busy street crossing has to exercise all these qualities. The director of a big company also possesses the same qualities. The only difference between the motor driver and the company director is that the decisions of the latter affect a large number of persons and a greater quantity of resources.

The arguments given above are convincing. It is possible also to extend them further. Ultimately there are only two factors of production : Man and Nature. Capital is the product of labour working on natural resources and can be included within either Man or Nature and organisation is a form of labour.

The only reason which justifies the retention of the fourfold classification is that of convenience. The four factors have different characteristics and the incomes earned by them are determined by different principles. So it is better to discuss each of them separately.

WEALTH AND WELFARE

'Wealth' means a stock of goods. 'Welfare' means the feeling of 'well-being' or 'satisfaction' which may be induced in the mind of a man by external conditions.

Welfare depends on many factors of which wealth is one. Without at least some wealth (material goods) life is impossible. Even a saint requires food and clothing, while for the ordinary man a reasonable amount of material goods is the prerequisite of happiness.

Welfare, however, is *not proportional* to wealth. A man with property worth Rs. 10 lakhs is not necessarily twice as happy as a man with Rs. 5 lakhs. From the standpoint of the society as a whole increase of wealth does not necessarily increase welfare. Suppose that a new factory for the manufacture of whisky is constructed. The wealth of the country increases because the extra whisky produced is

additional wealth. But the welfare of the people is reduced because the consumption of the whisky will have harmful consequences on the health and morals of the people.

We can distinguish between two types of welfare : Economic welfare and Non-economic welfare. Economic welfare is that part of total welfare which can be measured in terms of money. Non-economic welfare includes all other types of welfare, e.g., moral welfare, social welfare etc. These two types of welfare are not mutually exclusive. As Pigou points out, non-economic welfare is liable to be modified by (i) the manner in which income is earned (bad working conditions, long hours of work etc. will reduce non-economic welfare) and (ii) the manner in which income is spent (of different acts of consumption yielding equal satisfaction, one may exercise a debasing and another an elevating influence). Therefore, increase of wealth (or economic welfare) may under certain circumstances reduce non-economic welfare to such an extent that total welfare is lowered. Pigou, however, is of opinion that such effects are exceptional and sometimes not calculable. Therefore, the economist should proceed on the assumption that increase of wealth will increase welfare. In other words, "qualitative conclusions about the effect of an economic cause upon economic welfare will hold good also of the effect on total welfare".⁷ According to Pigou, generally speaking, increase of wealth is a contribution to human welfare while decrease of wealth is a social loss.

RECOMMENDED READINGS

1. Marshall, *Principles of Economics*, pp. 1-43.
2. Benham, *Economics*, Ch. I.
3. Robbins, *The Nature and Significance of Economic Science*, Chs. I and II.
4. Boulding, *Economic Analysis*, Ch. I.
5. Stigler, *Theory of Price*, Ch. I.
6. Cairncross, *Introduction to Economics*, Chs. 1-2.
7. Samuelson, *Economics*, (9th edition) Ch. I.

EXERCISES

1. Define Economics. What is the subject matter of Economics? (C.U. B.Com. '71).
2. "Economics is fundamentally a study of scarcity and of the problems to which scarcity give rise." Discuss. (C.U. B.A. '71).
3. "Scarcity is the most fundamental characteristic of an economic problem". Explain the statement with suitable examples. (C.U. B.A. '73).

⁷ Pigou, *Economics of Welfare*.

4. Examine the adequacy of the definition of economics as a science of wealth.

5. What are the reasons for which economics is regarded as a social science? (Gau. B.A. '64).

6. "Economics studies the part played by money in human affairs." Critically examine this statement. (C.U. B.A. '59; Gau. B.A. '60).

7. Examine the definition that economic activity consists in the allocation of scarce means to given ends.

8. "Economics is really not so much about money as about some things which are implied in the use of money. Three of these—exchange, scarcity and choice—are of special importance." Explain and evolve a definition of Economics. (C.U. B. Com. '62).

9. Discuss, "Economics should remain neutral as between ends." (C.U. B.A. Hons. '62; C.A. Final Nov. '70).

10. Distinguish between 'wealth' and 'welfare'. (Gau. B.A. '64).

11. Compare Marshall's and Robbins' definitions of Economics and show which you consider more appropriate and why. (Mysore, B. Com. '67).

12. Examine the nature of Economic Laws. (C.A. Final Nov. '73).

CHAPTER 2

LAND AND LABOUR

LAND

The term "Land" is used in Economics to include all gifts of nature which yield an income and which are under some person's ownership and control. The term may be used in a wider sense so as to include all free gifts of nature irrespective of ownership. Land provides the space on which production is carried on.

Differences between Land and Capital.—See p. 39.

THE CHARACTERISTICS OF LAND

Land, as a factor of production, possesses certain special features. They are as follows:

1. *Land has no cost of production*: The supply of land came from nature. No human effort or sacrifice was necessary originally. The supply of the other factors of production, (labour and capital) depends upon human effort and sacrifice.

2. *Its supply is fixed*: The total land surface is determined by nature and cannot be changed by human effort except to a limited extent. Soil erosion, flood and earthquake may reduce the existing supply of usable land, while building of dykes, afforestation, and exploration may add to it. The processes, however, are extremely slow. While discussing short-run problems we can assume that the supply of land is fixed.

3. One important consequence of the relative fixity of supply of land is that *land-ownership is a monopoly*. If the demand for the products of land increases (e.g., due to increase of population) the landowners can get increased income through higher rents. In the converse case rents fall and the landowner's income decreases. Increase in land values is a windfall gain to landowners while their decrease is a windfall loss. These features are found in all cases where the supply of a factor of production is fixed.

4. *Land is heterogeneous*: The productive capacity of land varies widely. Some plots are so infertile that cultivation is not worth while; others yield produce the value of which is greater than the costs incurred. Between these two types are found plots the value of whose yield is just equal to the expenditure on them. The last type is called the marginal land. What lands are marginal depend

not only on their fertility and situation, but also on the market price of the products. When the price changes the margin also changes. Lands yielding a surplus above cost are called *intramarginal lands*. Lands yielding less than cost are called *submarginal lands*.

5. *Land is used for a variety of purposes, e.g., cultivation, dairy, farming, sheep-rearing or building houses.* The purpose for which a particular plot is used will depend on its yield from that use. Transfers from one use to another may take place, if for any reason, the yield or the relative suitability changes. Many plots of land are on what may be called *the margin of transference* from one use to another.

6. *The yield from land is subject to the law of diminishing returns:* Increased use of capital and labour on a particular plot of land does not, save in exceptional circumstances, increase the yield proportionately.—See Ch. 10.

LABOUR

Labour may be defined as “any exertion of the body or mind undertaken wholly or partly with some object other than the pleasure derived from the labour itself”.¹ A boy playing football for amusement is not a labourer but a professional footballer, who is employed at a price, is a labourer.

Labour is not merely a factor of production. It is also the beneficiary of production. The object of production is to supply the wants of humanity which is the source from which the supply of labour is drawn. If land or capital is misused only its owners will suffer but if labour is misused (under-employed or over-worked) the quality of social life will deteriorate.

CHARACTERISTICS OF LABOUR

Marshall in his “Economics of Industry” mentioned the following peculiarities of labour as a factor of production :

1. Labour cannot be separated from the labourer. “The worker sells his work, but he himself remains his own property.” Consequently the investment of capital in him (through education or otherwise) depends largely on the forethought and unselfishness of his parents or guardians.

2. The seller of labour must deliver it himself. Therefore, the environment in which he works is of great importance to him. Also, “mobility of labour and mobility of the labourer are convertible terms”.

3. Labour is perishable. “The time lost when a worker is thrown

¹ Jevons, quoted by Marshall.

out of employment cannot be recovered, though in some cases his energies may be refreshed by rest."

4. Labour is at a disadvantage in bargaining. Usually, labourers have no reserve and therefore, are compelled to accept low wages rather than refuse employment. Development of trade unions has improved the labourer's position in this respect.

In addition to the above, the following further characteristics should be noted.

5. The supply of labour changes slowly. Increase of manpower depends on new births and a long period of training. Conversely, labourers on the market cannot withdraw from it rapidly, because, they must earn their subsistence somehow. The adjustment of supply to demand takes a long time.

6. The supply of a commodity increases when its price rises. But increase of wages, enables the labourer to enjoy more leisure, and therefore sometimes leads to a reduction in the supply of labour.

7. Cairncross mentions that labour is something more than mere toil and exertion. Labourers, being human beings, have intelligence and judgment. In modern times purely mechanical work is usually done by machinery. Brain is now more important than brawn. The distinguishing mark of labour as a factor of production is the exercise of intelligence and judgment.

THE SUPPLY OF LABOUR

The amount of labour power available in a country (*i.e.*, the Supply of Labour) depends on the following factors : (i) the number of people living in the country, (ii) the percentage of people who are of "working age" (say 15 to 60), (iii) the efficiency or productive power of labour and (iv) the hours of work and other institutional factors limiting the availability of the labour.

The number of inhabitants of a country depends on : (i) migration and (ii) the rate of growth. The first factor is of importance only in new countries and those old countries which are the sources of migrants (*e.g.*, U. K.). In Asiatic countries migrations are of less significance and the second factor, *viz.*, the rate of natural growth is of much more importance.

Various attempts have been made to formulate economic principles relating to population. Of them, the following are important : (i) the Theory of Malthus, (ii) the Optimum Theory of Cannan and (iii) the Biological Theories of Kuczynski and others.

THE THEORY OF MALTHUS

Thomas Robert Malthus, an English clergyman, wrote a book on population growth in 1798. His theory is summarised below :

1. **Rapid growth of Population.** Nature has endowed human beings (along with other animals) with great fecundity. Population, therefore, increases very rapidly. According to Malthus, increase of population occurs in geometrical progression and the population of almost every country doubles itself in twentyfive years. Geometrical Progression means increase by multiplication, as in the series, 1, 2, 4, 8, 16 etc., or 1, 3, 9, 27 etc.

2. **Slow growth of Food Supply.** The food supply of a country increases at a much slower rate. It increases in Arithmetical progression. Arithmetical Progression means increase by addition, as in the series 1, 2, 3, 4 etc., or 3, 5, 7, 9 etc.

3. **Result : Over-population.** As a result of the difference between the rate of growth of population and the rate of growth of food supply we find that in every country, sooner or later, food shortage occurs. This is the stage of over-population.

4. **The Malthusian Cycle.** When this stage comes, grave problems arise. Shortage of food causes malnutrition, famine, disease and pestilence. Hunger leads to invasions and war. These are called by Malthus, the Positive Checks. As a result of the operation of the Positive Checks, population is reduced and the balance with food is restored. But the balance is a short-lived one. For, the inherent urge to multiply soon asserts itself and population again increases and overtakes the food-supply. The sequence of events (called the Malthusian Cycle) can be shown as follows :

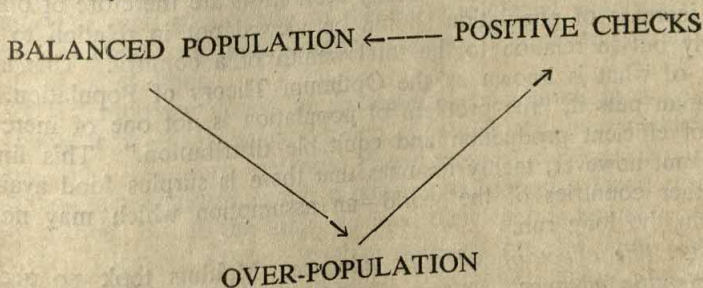


FIG. 1

5. **Preventive Checks.** The only way of escaping this unfortunate sequence of events is to exercise control over the growth of population. Malthus suggested two methods of doing so, viz., late marriage and celibacy (avoidance of marriage). He called them Preventive Checks.

Criticisms of the Malthusian Theory. The theory of Malthus produced a great controversy. Most of the leading economists of his

times accepted it. But there were critics who thought that the theory was too pessimistic. Nowadays it is believed that the theory contains elements of the truth but that it is an oversimplification of the problem of population growth. The main criticisms urged against the theory are summarised below :

1. *Growth formulas not correct.* The *mathematical formulas* regarding food supply and population growth are not correct. This criticism is beside the point because Malthus used the formulas only as examples to illustrate the dissimilar nature of the growth of population and food supply.

2. *The effects of additional population.* Malthus failed to consider that the additional *increments of population are also capable of production*. "A baby comes to the world not only with a mouth and a stomach but also with a pair of hands". Against this criticism it may be said that in agriculture the law of diminishing return applies and the additional hands will produce less and less amounts of food in course of time. For a time the tendency towards diminishing returns may be held in check by improvements in the arts of cultivation but it is bound to operate sooner or later. The real basis of the Malthusian Theory is the Law of Diminishing Returns.

3. *Import of food.* The economic history of the 19th and the 20th century shows that it is possible for an industrialised country to maintain a large population by *importing food from outside* in exchange of its industrial products. The United Kingdom is the best example of such a situation. Many economists are therefore of opinion that increase of population should be viewed not in relation to food supply but in relation to the total wealth of a country. This is the basis of what is known as the Optimum Theory of Population. As Seligman puts it, "the problem of population is not one of mere size but of efficient production and equitable distribution." This line of criticism, however, tacitly assumes that there is surplus food available in other countries of the world—an assumption which may not be true in the long run.

4. *The effect of scientific advance.* Malthus took no account of *scientific advance*. During the 19th and the 20th century there was a tremendous increase of productivity in agriculture and industry. Scientific advance may in course of time render possible the production of food directly from inorganic matter, thus freeing human beings from the dependence on agriculture which is subject to the law of diminishing returns.

5. *The effect of cultural advance.* Statistics show that cultural advance produces a *decline in the birth rate*. Spread of education leads to a higher standard of living and late marriages. In 19th century Europe it was found that the birth rate was lowest where

wages were highest. In modern times people voluntarily adopt medical methods of control, which are cheap and readily available, rather than incur possible loss of health and additional expenditure. In fact, some of the Western countries are now faced with problem of declining population to such an extent that many people are talking of "race-suicide."

Conclusion. In countries of Western Europe the bogey of Malthusianism has been overcome. The rate of population growth has fallen. Industrial and agricultural productivity has risen. *Shortage of food is not a problem* in these countries. But *this is not true in the underdeveloped regions of the world like India and South East Asia.* There is food shortage in all these areas and the rate of population growth is high.

Statistics show that the population of the world is increasing at a fairly high rate. In 1800 the total world population was 919 million. In 1940 it was 2245 million and in 1970 it was 3632 million. World population in 1970 was nearly four times it was in 1800. J. E. Meade¹ calculates that the world's population in the year 2000 is likely to be three times what it was in 1950. He also finds that at the present rate of growth of the world population (1.7% per annum) in 850 years the whole of the world's land surface will be needed to provide standing room only to human beings. The rates of growth of population in underdeveloped countries is higher than the world average. For example, in India between 1961 and 1971, population increased at the rate of 2.45% per annum. Thus *the danger of over-population is real*, particularly in the underdeveloped countries. The planning authorities in such countries cannot afford to ignore the predictions of Malthus.

For a temporary period an increase of population in a country may enable it to secure better division of labour and greater efficiency of production. A more equitable distribution of the world's wealth and income may similarly enable a country to support a larger population for a time. But in the long run food deficiency is bound to occur unless, (i) scientific advance enables men to prepare food directly from the elements or (ii) an effective population control policy is applied simultaneously in all countries of the world.

THE OPTIMUM THEORY OF POPULATION

The Optimum Theory of Population became fashionable in the 1930's. It was worked out mainly by Edwin Cannan and Carr Saunders of the London School of Economics.

¹ *Economic Journal*, June, 1967.

The Theory. The Optimum Theory does not deal with the laws of population growth or food-supply. It is only an attempt to find the relationship between population and wealth production. The Optimum Theory has been described by Cannan as follows : "At any given time (in a country) there is what may be called a point of maximum return when the amount of labour is such that both an increase and decrease in it would diminish proportionate returns. If population is not large enough to bring all industry up to this point, returns will be less than they might be and the remedy is increase of population ; if on the other hand, population is so great that the point has been passed, returns are again less than they might be and the remedy is decrease of population".

The Optimum Population. The Optimum Theory is based on the concept of Optimum Population. The Optimum Population is that number of people which is necessary to exploit the resources of the country in the best possible way. It is defined as the population *just sufficient to get the maximum output* with the capital, natural resources and techniques available at the time under consideration. If the actual population is less than the optimum, increase of population increases the total output of the country more than in proportion to the increase of population, and the per capita income increases. When population exceeds the optimum, total output does not increase proportionately, while the number of shares in the output increases. Hence, per capita income falls. The ideal situation is that in which the actual population is equal to the optimum population.

If A is the actual population and O the optimum, then $(A - O) \div O$ measures the degree of population maladjustment. If A is less than O , the country is underpopulated. If A is greater than O , the country is overpopulated.

Whether there is population maladjustment or not can be found out by calculating the per capita income of the country over a number of years. A falling per capita income is the sign of overpopulation. A rising per capita income shows either that the country is underpopulated or that the population maladjustment is becoming less.

Criticism. The Optimum Theory was very popular at one time. It is, however, full of difficulties and has been more or less discarded at present. The principal criticisms of the theory are summed up below.

1. *A static concept.* The concept of optimum population is a *static concept* inapplicable and irrelevant to a dynamic world. The size of the optimum population depends on the capital resources, the techniques of production, the modes of business organisation and the rate of investment. As all these factors are constantly changing, the optimum must be a fluctuating figure. The invention of a labour-

saving machinery, for example, would immediately convert a country with optimum population to overpopulation. Conversely, the discovery of a new economic resource (a new mine, for example) would make the same country underpopulated.

2. *Not measurable.* It is *impossible to measure* the optimum population and the degree of population maladjustment.

3. *Not useful.* For the reasons stated above the optimum theory cannot be used for the purpose of formulating a population policy.

Conclusion. The Optimum Theory is valuable in so far as it enables us to overcome the bogey of Malthusianism. Increase of population is not to be feared if there is simultaneous increase of productivity. The theory also gives us a test of progress (*viz.*, the per capita income). So long as the per capita income is rising there is no danger from increasing population. But the theory is useless as a guide to economic policy.

MALTHUSIAN THEORY v. OPTIMUM THEORY

The two population theories, Malthusian Theory and the Optimum Theory are diametrically opposed to each other. The main points of difference between them are summarised below.

1. *Population growth v. productive resources.* The Malthusian Theory is a theory of population growth. It discusses the rate of growth of population and the effects of such growth on the community. The Optimum Theory is *not* a theory of population growth. It discusses the relationship between the number of people living in a country and its productive resources.

2. *Food supply v. total output.* Malthus concentrated attention on food supply. The Optimum Theory concentrates attention on the total output, industrial as well as agricultural.

3. *Over-population v. Optimum population.* Malthus defined overpopulation in terms of food-supply. A country is overpopulated if it does not produce enough food to feed its population. The Optimum Theory defines overpopulation in terms of productivity. A country is overpopulated if it contains more people than what is required for the best utilisation of its productive resources.

4. *Pessimism v. Optimism.* Malthus was a pessimist. He made the gloomy prophecy that men are bound to go through the cycle of overpopulation, misery, death, a short period of balance between food and population and again overpopulation. The Optimum Theory is highly optimistic. According to it, there is no danger from population increase so long as it does not exceed the number required for the optimum utilisation of the productive resources of the country.

5. *Dynamic theory v. Static approach.* The Malthusian Theory is a dynamic theory. It deals with the course of population growth

over a period of time. The Optimum Theory is static in its approach. It considers the population problem with reference to a particular stage in the country's development. The optimum population is calculated with reference to the productive resources available at a particular time.

Conclusion. The Malthusian Theory has a large number of believers even now. The Optimum Theory has been practically discarded by modern economists. The current trend is to prefer the biological approach to the population question.

THE BIOLOGICAL THEORIES

In modern times biologists and statisticians have made intensive studies of population growth and have attempted to find out the principles governing it. Two conclusions of this approach are of interest to economists. One relates to the nature of population growth and the other to the method of measuring it. These are explained below.

The Theory of Demographic Transition. The Logistic Curve. Statistics show that population does not always grow at a fast rate. The rate of growth of population varies from time to time in every country. If the rate of population growth is graphically charted it looks like the S shaped curve known in mathematics as the Logistic Curve. This shows that population increases first very slowly, then comparatively rapidly and finally becomes either stationary or declines. These phenomena may be explained as follows. In the early stages of development of a country there are obstacles to the growth of population like, lack of security, lack of food, unfavourable social customs, etc. Therefore, population grows slowly. This situation is found in tribal communities and primitive civilisations. With development, these obstacles are removed and population grows rapidly. For example, among the ancient Aryans and in U.S.A. in the 19th century the rate of growth of population was high. But as soon as the community reaches an advanced stage of civilisation, the rate of growth becomes steady or declines. This situation is found in U.K. France and other West European countries.

The Biological Theory of population growth contradicts the Malthusian Theory. According to the latter, population always grows at a fast rate. According to the former, population growth slows down with the development of culture and civilisation. Thus the Biological Theory holds out an optimistic view regarding the future of mankind.

The Net Reproduction Rate. Kuczynski and others have pointed out that the rate of growth of population does not really depend on the difference between the birth rate and the death rate in a country. It depends on the number of women of child bearing age. To find

the rate of growth of population in any country we must adopt the following procedure :

1. Find out the total number of women of child bearing age (say 15 to 50) and divide them into suitable age groups.

2. Find out the total number of *female* children likely to be born from each of the aforesaid groups. This number depends upon the customary practices, in the country concerned, as regards marriage, divorce, widowhood, and the use of contraceptives.

3. Deduct from the above the number of female children likely to die before child-bearing age or remain unmarried or widowed. The necessary figures can be obtained from statistics relating to birth and deaths.

4. The difference between 2 and 3 gives the number of women capable of further propagation.

The ratio of item 4 to item 1 measures the rate of increase of population and is called the *Net Reproduction Rate*. If item 4 is equal to item 1, the population is stationary ; if item 4 is larger than item 1, the population is increasing ; if item 4 is less than item 1, population is decreasing. Expressed as a ratio these three cases are : Net Reproduction Rate (i) equal to unity, (ii) greater than unity and (iii) less than unity, respectively. Thus if item 1 is 1000 and item 4 is 800, the net reproduction rate is $800 \div 1000 = 0.80$.

The above method of calculation draws pointed attention to the distinction between fertility and fecundity. Nature may have endowed human beings with enormous powers of multiplication but in actual fact these powers are held in check by various factors like death of female children, widowhood, use of contraceptives etc. The net effect of these factors may be a decline of population. Carr Saunders showed in 1934 that the net reproduction rate in most European countries was less than unity. This is in direct contradiction to the first premise of Malthus which says that population grows in geometrical progression. The net reproduction rates of some countries are given below :

India (1941)	..	1.31	U.S.A. (1971)	..	1.07
U.K. (1968)	..	1.21	U.S.S.R. (1968-69)	..	1.11
France (1967)	..	1.25	Japan (1967)	..	1.05

POPULATION CONTROL

Economic Effects of Population Growth. *Evils of Over-population* : Excessive population causes poverty and a low standard of living. In underdeveloped countries like India, where industries have not been adequately developed and employment opportunities are few, growth of population leads to great pressure upon land, shortage

of food and unemployment. A high number of consumers retards savings. Therefore over-population has a bad effect on capital formation.

Under these circumstances, reduction in the rate of population growth is bound to be advantageous. Advanced countries want to follow the ideal, "Zero Population Growth". This objective can be realised by having only two children per family.

Remedial Measures: The bogey of overpopulation raised by Malthus deeply influenced political and economic policy during the 19th, and the early part of 20th century. A school of thought grew up, known as Neo-Malthusianism, which advocated positive measures of population control through the use of methods not known in the days of Malthus, viz., medical contraceptives. Unfortunately these methods are used mostly by the educated and the cultured classes. Therefore there is a danger that the quality of the population will deteriorate. A rational population control policy must be qualitative and not merely quantitative.

The measures that can be adopted to deal with the problem of overpopulation are as follows :

1. Introduction of compulsory medical examination before marriage and prohibition of the marriage of persons found to be mentally defective or suffering from hereditary diseases. This measure will improve the quality of the population.

2. Spreading information among the people regarding family planning.

3. Increasing the number of schools and colleges and raising the cultural level of the people. Biologists have shown that a high level of culture and a high standard of living tends automatically to reduce the rate of growth of population.

4. Economic development, which will create more employment opportunities and raise the level of incomes and the standard of living.

CONSEQUENCES OF A DECLINING POPULATION

Reduction of population is generally considered desirable in under-developed countries with a large population, like India. In such countries there exists a surplus population which can be eliminated without affecting either production or aggregate demand. But rich countries like U.K. or U.S.A. are in a different situation. In such countries a reduction of population may produce certain bad results. The possible evils of a declining population in rich countries are mentioned below.

1. Reduction of population will reduce effective demand. Less people will mean less demand for goods and services. The total

expenditure on goods and services will fall. Consequently production will fall.

2. With declining production it is almost impossible to maintain full employment. Hence declining population in a developed country will generally involve more unemployment. People temporarily unemployed, because of changes in the industrial structure, will find it more difficult to get new jobs. Hence structural unemployment will increase.

3. Reduction of effective demand and of output will reduce the national income. The rate of economic growth will fall and the country will move towards economic stagnation. The followers of Keynes believe that a high rate of growth of population is necessary to avoid 'secular stagnation'.

For the reasons stated above, Hansen and many other economists are of opinion that "a positive rate of population growth is desirable in most rich countries."

EFFICIENCY OF LABOUR

Efficiency or the productive capacity of labour, depends on various factors of which the following are important :

1. *The racial stock* : People of some regions are by nature more hardy and industrious.

2. *Climate* : Generally speaking, labourers can work harder in cold and equable climates. Heat discourages hard work particularly if it is combined with great humidity.

3. *Nature of food-supply* : Food habits are important from the standpoint of efficiency. A diet containing protein (wheat, meat etc.) build up the body and facilitates hard work.

4. *Medical and Sanitary Arrangements* : Disease is a great hindrance to efficiency. Good medical and sanitary arrangements keep the labourers healthy and add to their efficiency.

5. *Education* : Education, both general and technical, adds greatly to efficiency. In modern industry, general intelligence is more important than manual dexterity. It is the function of education to develop intelligence and improve the morals.

6. *Social and Political Environment* : The Social structure influences the mental and moral conditions of the workers. Political freedom and religion are also important influences.

7. *Working conditions* : Efficiency is increased if the place of work is well ventilated and pleasant, if the hours of work are not too long and, if there is plenty of leisure and recreation facilities. Efficiency also depends in a considerable measure on the nature of machinery and tools supplied by the employer.

8. *Income and the Standard of Living* : Efficiency is impossible if the wages are too low. Labourers cannot maintain their health and spirits if their income is not sufficient to provide them with their necessities and also a reasonable amount of comforts and luxuries. Efficiency also depends on the manner of spending the income. Too much expenditure on drink and drugs naturally reduces efficiency.

RECOMMENDED READINGS

1. Benham, *Economics*, Ch. IX.
2. S. H. Cooniz., *Population Theories and their Economic Interpretation* (1957).
3. Samuelson, *Economics* (9th edition), Ch. 2.

EXERCISES

1. Distinguish between land and capital and describe the characteristic feature of land as a factor of production.
2. When is a country said to be overpopulated, and when underpopulated?
3. Examine the merits of the optimum theory of population as compared with the approach of Malthus. (C.U. B.Com. '62).
4. What are the factors that affect the efficiency of labour?
5. Examine the Malthusian Theory of Population. (C.A. Final May '73).
6. Explain and discuss the concept of the Optimum and the Optimum Theory of Population. (Compare C.A. May '65).
7. Explain the meaning of production in economics. Give their characteristics of labour as a factor of production. (C.A. Final May '73).

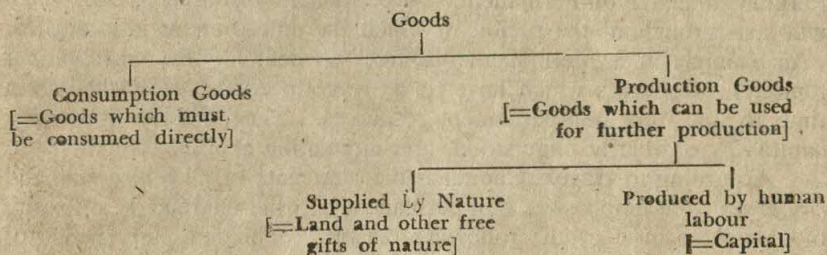
CHAPTER 3

CAPITAL AND ITS PROBLEMS

DEFINITION OF CAPITAL

Capital, as a factor of production, is commonly defined as that part of wealth (excluding land and other free gifts of nature) which can be used for further production. In the language of Bohm-Bawerk, Capital is, "produced means of production" *i.e.*, those "means of production" which have been produced by labour. (Examples—tools, machines, buildings etc.)

The meaning of capital can be explained by means of the following chart :



Criticisms. The definition of capital given above, may be criticised as follows :

1. *The distinction between Consumption Goods and Production Goods is unreal.* The same commodity may come within both categories. A motor car used professionally by a businessman is capital according to the above definition but the same car used by the same man for a joyride is not. A cup of coffee is apparently a consumption good. But if a man takes a cup of coffee, so that he may stay awake at night for work, it becomes a means of production and therefore capital. Thus there is no clear cut line of separation between production goods and consumption goods. Marshall recognised this fact.

2. *Bohm-Bawerk's definition of capital completely ignores the businessman's view of capital.* As used in trade and commerce (and in accountancy) the term Capital includes not only machines and tools but also money, bonds and securities, and land. The physical assets, used for production, are always expressed by businessmen and accountants in terms of money.

Some Recent Views on Capital. Modern writers emphasize the necessity of analysing the component parts of the capital structure. Lachmann¹ observes that, "Capital is a complex structure, a heterogeneous aggregate, functionally differentiated in that the various resources composing it have different functions".

Hayek² states that there are two relevant quantitative relations which must be taken into account if we want to understand the working of the price-mechanism in the fields of capital and interest. They are : (i) the dimensions of the real structure of productive equipment, describing how it is organised for yielding various quantities of output at different dates, and (ii) the proportional demands or relative prices which are expected to rule for these different quantities of output at different dates. The two aspects are those of relative costs and relative demand, respectively. Together they determine the supply of capital in value terms.

Hayek divides the resources used in production into two classes : Permanent and Non-Permanent. A permanent resource is one which will last throughout the period in which the entrepreneur is interested. (An example of a "permanent resource" so defined—the entrepreneur himself). Resources which have to be reproduced or replenished from time to time, are non-permanent resources. They include both fixed capital, as ordinarily understood, and circulating capital.

According to Hayek, Capital is the aggregate of all *non-permanent resources*. He emphasizes non-permanency as the characteristic feature of capital because of the following reason : The non-permanence of some resources (e.g., machines) makes it necessary to devote a part of the current productive services for their production. This involves using a part of the current productive services in such a way that they will not yield consumable goods until a later date. By this method more consumable goods are produced than would have been possible otherwise. According to Hayek we should use the term capital only to include resources which are non-permanent and which have therefore to be reproduced. "The important thing is, not that the capital has been produced, but that it (or some equivalent) has to be reproduced."

IS MONEY CAPITAL ?

Money by itself can produce nothing. Money must be converted into production goods like tools and implements or used for hiring labour before it can produce anything. Therefore money is not capital. But production goods are valued and expressed in terms of money. Businessmen are prone to consider money as capital because money

¹ Lachmann, *Capital and its Structure* (1955).

² Hayek, *The Pure Theory of Capital*.

can, in all modern communities, be converted into real resources and used in production. It is better to use the term *money-capital* or *finance-capital* to indicate the businessman's concept of capital.

SOME DISTINCTIONS

Capital and Wealth. Capital in the sense of production goods (or Concrete Capital) is co-extensive with social wealth. All wealth is capital because every item of wealth yields income in the form of a "flow of utilities" and can be used as an aid to production. Marshall was of opinion that the term 'wealth' should be used when economic goods are considered from the standpoint of consumption and that the term 'capital' should be used when considering them as agents of production.

Land and Capital. Land can be distinguished from capital as follows :

1. *Land is a gift of nature while capital is the result of man's efforts :* Land, in the ordinary sense of cultivable land, usually contains a good deal of capital investment, e.g., drainage and irrigation works, fencing, manuring, etc. The value of land attributable to such investment is the product of human effort and foresight. But, in addition, every plot of land gets from nature a certain amount of space, air, sunshine, rain, mineral deposits etc., the quantity and quality of which cannot be changed by human labour. The last named elements constitute what Ricardo called "the original and indestructible powers of the soil". The existing supply of land and the "powers" mentioned by Ricardo have come from nature to man. They are "gifts" of nature. But capital, which means production goods like implements and machinery, is the product of human labour and sacrifice.

2. *Land has no cost of production but capital has :* The supply of land came from nature and cost men nothing originally. Capital, however, comes into existence only as a result of men's efforts and sacrifices.

3. *The supply of land is fixed by nature while the supply of capital is variable :* The total quantity of land available for us is determined by nature. But the amount of capital available can be increased by human effort. Machinery and implements can be produced by work. Also, capital can be destroyed by continuous use or by deliberate acts of men. During wars, considerable destruction of capital occurs. Therefore, the supply of capital is variable, while the supply of land is fixed.

It is to be noted, however, that the supply of land is not absolutely fixed. It can be increased by reclamation and other methods. It is also possible to lose land from the existing stock. Some economists are therefore of opinion that there is no necessity of separating the

two factors of production. According to them, land is simply a type of capital the supply of which takes a long time to increase or decrease. For purposes of economic analysis it is, however, better to keep the two concepts separate because the supply of land varies very slowly, while the supply of capital can change quickly.

Capital and Income. See p. 18.

Fixed Capital and Circulating Capital. Capital converted into a durable form (*e.g.*, machinery or buildings) is called fixed capital while circulating capital consists of items which can be used in production only once (*e.g.*, raw material). This distinction is important because fixed capital is in many respects similar to land while circulating capital is not. The term Working Capital means money and raw materials, with which the operation of the firm is carried on.

Specific Capital and Non-specific Capital. Some tools and machines can be used only for particular purposes, *e.g.*, Surgical Instruments, Drilling Machine etc. Other machines and tools can be used for a variety of purposes, *e.g.*, Universal Boring Machine, Screw-Driver, Cutting Pliers etc. The former capital goods are called Specific Capital. The latter capital goods are called Non-specific Capital.

Deepening and Widening of Capital. If the accumulation of capital goods is faster than the growth of labour, it is called Deepening of capital. In other words when capital grows relative to labour, it is called deepening of capital. Merely the duplication of capital goods is called the Widening of Capital. The terms stated above is generally used in the theory of development and growth.

CHARACTERISTICS OF CAPITAL

Capital, as a factor of production, possesses the following characteristics.

1. *Capital is productive* : Labour with the aid of capital can produce more than it can without it. Because capital is productive, people demand it and are able to pay money for loans of it.

2. *Capital is prospective* : People look forward to getting an income by accumulating capital. This characteristic explains the supply side of capital.

3. *Capital is the result of labour* : Tools, machinery and materials, which are now used for producing goods were once the immediate products of labour working on natural resources. Hence capital is the "accumulated product of past labour destined for the production of future wealth". This was John Stuart Mill's definition of capital.

4. *Capital is the result of saving* : Production of capital goods means creation of goods which cannot be consumed immediately. The

reward of such labour (in the form of final goods) comes at a later time. Hence capital is "a single coherent mass of saved-up labour and saved-up land, which is accumulated in the course of years". This was Wicksell's definition of capital.

5. *Capital is non-permanent* : It has to be reproduced and replenished from time to time. See Hayek, p. 38.

THE FUNCTIONS OF CAPITAL

The functions of capital may be enumerated as follows :

1. *Capital increases the productivity of labour* : Capital goods like machines and tools enable the labourer to produce more goods and sometimes better goods. The total output of society increases, thus increasing the national income as also individual incomes.

2. *Capital secures synchronization between production and consumption* : This is done in two ways :

(a) Capital supplies labour with subsistence during the course of production. In modern times production is usually a lengthy process. A considerable time elapses between securing the raw material and obtaining the price of the finished goods from the consumer. During this period the wages of labour are paid out of the working capital of the firm. This may be regarded as a function of money-capital.

(b) Capital secures continuity of production. If the employer has to wait for receiving the price of his first batch of output before commencing work on the second, there would be gaps in the production process. The use of money-capital enables production to be carried on as a continuous process.

3. *Production with capital increases total output but lengthens the period of production* : From the standpoint of the community as a whole, production with capital means that labour is first applied to creating capital goods. The final goods or consumption goods are obtained by labour working with these capital goods. Production with capital is, for this reason, called a "roundabout process".

Modern methods of production are "capitalistic" in the sense that large amounts of capital are used in production. It must be remembered, however, that even in a socialist state capital goods have to be used. Production with capital is a technological necessity. The socialist state can eliminate the capitalist but cannot eliminate capital.

GROWTH OF CAPITAL

Savings. The accumulation of capital depends on saving. If the community's whole income is spent on consumption, there can be no saving and no capital. Marshall explained this proposition by means of the following example :

Suppose that there is a primitive tribe of fishermen who live solely upon fish. The daily catch is their "income". If they consume the whole of their income every day they will have no time to prepare any capital equipment like a boat or a net. To make such capital it is first necessary to catch fish in excess of what is required for their daily consumption. The extra fish can then be used to maintain some of them while they are preparing a boat or net. Thus, capital can be produced only when income exceeds consumption, and the excess is saved.

In a modern community incomes are earned in terms of money and savings are accumulated in terms of money. Capital comes into existence when the money-savings are converted into new capital assets like machinery and buildings.

Stages in Capital Formation. There are three well-recognised stages in the process of capital-formation in a country, viz.,

- (a) creation of savings by surplus of income over expenditure ;
- (b) mobilisation of the savings, and their canalisation into productive channels ; and,
- (c) the conversion of the mobilised money-savings into new capital assets.

Each stage has its own special problems. The first stage requires the existence of the will to save and the power to save. Also, the savings must not be wasted by purchase of unproductive assets like jewellery or by export abroad. The second stage of capital-formation, mobilisation and canalisation, depends on the efficiency of the machinery for the collection of savings, viz., the capital market, banks, insurance companies etc. The third stage depends on entrepreneurial enterprise, initiative and ability, and the availability of capital goods to start the process of production of new capital goods.

Factors Determining the Volume of Money-Savings. The volume of Savings in a community depends on the following factors :

1. *The propensity to save* : This means the inclination or disposition of the people to save. The propensity to save depends upon personal psychology which is greatly influenced by the social institutions in the country. A man usually saves from the following motives. (a) to provide for his old age (b) to provide for his wife and children and (c) to improve his social position. Social institutions may accentuate these motives or retard them. Existence of law and order, absence of dangers of expropriation, business morality and investment opportunities encourage savings, while disorder, lack of education and lack of foresight prevent savings. The habit of thrift is a personal quality but it depends greatly on the social environment.
2. *The amount of income* : The higher the income the greater is the ability to save. In the case of very rich persons saving is

usually automatic. They save because there is nothing else to do with their high incomes. A very large part of the savings of a modern community comes from the richer classes.

3. *The rate of interest* : Although interest is the price of savings, the supply of savings does not depend wholly on it. Some people will save even at zero or negative rates of interest for future security. The millionaire does not require the inducement of interest in order to save. But the total savings of the above groups are insufficient for the needs of a community. To induce sufficient savings a positive rate of interest is necessary. On the whole, the higher the rate of interest the greater is the volume of savings. This is the view of the classical and the neoclassical economists. But, according to Keynes, the rate of interest has no direct influence on savings. His view is that the aggregate savings of a community depend on the size of the national income.

There are people who wish to secure a definite income from their savings and they may save less if the rate of interest rises but we may ignore this class because their number is small.

Conversion of Money-Savings into Capital Goods. Savings are made by one group of people. The savings are converted into new capital assets by a different group, viz., industrialists and business leaders. Keynes used the term "investment" to indicate the second process (creation of new capital assets). Investment depends upon two factors (i) the expected profitability of the new capital assets and (ii) the rate of interests. Keynes calls the former the Marginal Efficiency of Capital. The rate of interest is a factor because it represents part of the costs that have to be incurred. Most investments are with borrowed capital.

RECOMMENDED READINGS

1. Cairncross, *Introduction to Economics*, Ch. 24.
2. Benham, *Economics*, Ch. X.
3. Hayek, *Pure Theory of Capital*.
4. Samuelson, *Economics* (9th edition), Ch. 3.

EXERCISES

1. What is capital? Is money capital? (C.U. B.Com. '71).
2. Define capital and enumerate the factors that are essential to capital formation in a country. (C.U. B.Com. '64; Compare C.A. Nov. '68).
3. Discuss the different forms of capital and their economic functions.

CHAPTER 4

FORMS OF BUSINESS ORGANISATION

TYPES OF BUSINESS ORGANISATION

In former times the organiser was usually a single individual (sometimes called the Entrepreneur). In modern times we find groups of individuals jointly initiating and operating a business or production unit. The modes of grouping differ and also the objectives. In some cases the only object is profit. In other cases it is mutual benefit or public utility. On account of these variations, business organisation has assumed various forms; in modern times. The principal forms are : (1) Single Entrepreneur System (2) Partnership (3) Company or Corporation (4) Co-operation, and (5) Public Undertakings. The first four forms are discussed in this chapter and the last one in Ch. 24.

DEFINITION AND FUNCTIONS OF THE ORGANISER

Organisation is really a form of labour. (See p. 20). But it is labour of a very specialised type. The functions of the organiser differ materially from those of other types of labour.

Organisation may be defined as the co-ordination of the factors of production in working units. The organiser is the employer of land, labour and capital. His business is to secure the efficient working of every item in the scheme of production. The duties of the Organiser may be summed up as follows :

1. *Division of labour.* He must arrange for proper division of labour. Every kind of worker in production must be set to the work for which he is best fitted.

2. *Necessary materials.* He must provide each worker with the necessary materials, tools, machinery and working place.

3. *Lay-out.* He must arrange the routine of work in such a way that there is proper synchronisation between workers and there is no delay or time-lag between the different jobs. This is known as "lay-out" or "routing of the job".

4. *Finance and accounts.* He must secure finance and arrange for keeping accounts. In modern big factories, the detailed cost of every job is calculated and recorded. Factory costing has become a specialised work.

5. *Appointment and management.* He must appoint workers carefully and manage them efficiently.

6. *Purchase and sale, including speculative possibilities.* Outside the factory, the organiser's duty includes the purchase of raw materials and other supplies and distribution or sale of the product. This involves an intimate knowledge of market conditions including, "speculative possibilities". He must be able to forecast future price movements and possible changes of habits, tastes and fashions, and must pre-arrange his purchases and production accordingly. The success or failure of a business depends on the organiser's ability in these matters.

7. *Risks of enterprise.* The organiser bears the risks of enterprise. He decides when and what to produce. If losses are incurred they fall on him. In some forms of business organisation (e.g., joint stock companies) the functions of risk-taking and organisation have been, to a certain extent, separated.

It is to be noted that some of the aforesaid functions (e.g., factory layout) are often performed through hired specialists. The organiser, however, is responsible for the overall planning.

THE SINGLE ENTREPRENEUR SYSTEM

The Single Entrepreneur System is a term used to describe an individual proprietary concern or the "One Man" business. The business is owned and managed by a single person. The chief advantages of this form of business organisation are as follows :

1. *Economy* : There is less dependence on hired managers. The owner can watch every operation. The "economy of the master's eye" prevents waste and secures better working.

2. *Quick decisions* : The single owner can plan quickly because it is not necessary for him to get the consent of anybody else.

3. *Quality production* : The single owner can devote individual attention to every product. He can vary the product to suit the tastes of particular consumers, and can produce artistic goods.

4. *Good labour relations* : The single proprietor is in direct touch with his employees and can usually maintain more cordial relations with labour than big undertakings.

The chief disadvantages of the system are as follows :

1. *Small capital* : Production and business in modern times usually require much larger capital than can be supplied or secured by a single individual.

2. *Great risk* : Even if one person can provide the capital it would be too risky for him to do so, because failure would involve personal insolvency.

The single entrepreneur system exists in small scale business (e.g., retail store), agriculture, cottage industries and some small-scale in-

dustries (like hosiery or rice milling) where comparatively small amounts of capital are required. Samuelson says that there are 8 million American business units in 1970—a situation which has been described as “infinitesimal business”. The small scale business plays a similar role in India.

“By number the tiny, self-owned individual proprietorship is overwhelmingly the dominant form of business. But in dollar value, political and economic power, pay rolls, and employment, some few hundred giant corporations occupy a strategically dominant position.” (Samuelson).

THE PARTNERSHIP

A partnership is a concern owned by a small group of individuals. In India, a partnership firm can have up to 20 partners. A business or industrial organisation with more than 20 proprietors must be registered as a company.

In a partnership there is joint management. Every partner is entitled to participate in the management. There is also unlimited liability. Every partner is responsible for all the debts of the firm.

The advantages of a partnership are as follows.

1. *More Capital.* It can raise more capital than the individual proprietary concerns.

2. *Efficient management.* The management is usually efficient because there can be specialisation and division of functions among the partners.

3. *Growth by new partners.* A partnership can grow (in size and in efficiency) by taking in new partners.

4. *More Credit.* It has credit in the market because of the unlimited liability of the partners.

The disadvantages of a partnership are as follows :

1. *Disagreement.* Efficiency suffers when partners disagree.

2. *Short-lived.* It is short-lived. Death or insolvency of a partner terminates the legal life of a partnership. In a partnership-at-will any partner can withdraw at any time.

3. *Great risk.* Because of unlimited liability there is great risk. Since every partner can, by his actions relating to the firm, bind the partnership, one bad partner can ruin all. In Great Britain partnerships can, in some cases, be formed with limited liability but not in India.

4. *Limitation of numbers.* In India it is provided by law that the number of partners in a firm must not exceed 10 in the case of banking companies and 20 in other cases. Even 20 partners cannot sometimes raise the capital required for modern large-scale production.

The partnership was the predominant form of business organisa-

tion in European countries during the 17th and the 18th century. In India there are many family businesses operated by members of joint Hindu families. They possess many features similar to those of partnership concerns.

In modern times the partnership form of business organisation is being rapidly supplanted by the company system.

THE COMPANY OR CORPORATION

Definition. The term Company or Corporation is used to describe an association of a number of individuals, formed for a common purpose and registered according to Company Law.¹ The usual purpose is earning profit by production and trade. A company is formed by selling shares, each share having a face value. The shareholders are members of the company and its proprietors. The terms Joint Stock Company and Corporation are used in the same sense as company. The mode of organisation of a company and the rights and the duties of the different parties in it are regulated by statutes known as Companies Acts. Companies may be of different types *e.g.*, Private Companies and Public Companies.

Characteristics. Some characteristic features of the company system are mentioned below.

1. A company is owned by its shareholders, but they do not directly take part in the management.

2. In India, company shares may be of two types, *viz.*, Ordinary or Equity shares and Preference shares. Holders of preference shares enjoy certain privileges as regards payment of dividends. In U.K. and U.S.A. many other types of shares are found.

3. The shares are transferable, so the ownership of a company lies "in a shifting body of men".

4. The liability of a shareholder is limited to the face value of the share. He is not personally liable for the debts of the company. (This rule applies to the majority of companies. A company may, however, be formed with unlimited liability.)

5. A company is usually managed by directors elected by the shareholders.

6. In the eye of law the Company is a single individual. It is a legal person.

7. A company can get capital by the following methods :
(i) Issue of shares. (ii) Issue of debenture and bonds. (iii) Loans from

¹ See Sen & Mitra, *Commercial and Industrial Law*, Part X, Ch. I.

financial institutions e.g., Industrial Finance Corporation etc. (iv) Loans from Commercial and Industrial Banks. (v) Loans from the Government.

Advantages. The advantages of the Company or Corporate system are as follows :

1. *It facilitates large-scale production.* In public companies there is no limit to the number of shareholders. By selling shares to a large number of persons a large sum of money can be collected as capital even though the value of a single share is kept small. Thus the company system can provide the capital necessary for large-scale production.

2. *It brings together capital and business ability.* There are many monied men without the ability or the desire for running a business and many able men without money. The company system unites the two classes. The shareholders supply the capital, the directors and managers supply business ability.

3. *The shareholder's risk is reduced.* The company system eliminates some of the risks of investment. Unlike a partnership, a company is not bound by the actions of any particular shareholder. Therefore the interests of a shareholder are not affected by the lack of ability or honesty on the part of any shareholder. In a company with limited liability, the shareholder is not liable to pay anything more than the face value of the share he has purchased. The small value of the individual shares and the principle of limited liability makes the total risk small. The investor can, if he so desires, distribute his investment among many companies. The failure of any company will not then cause great loss. The limitation of possible loss enables risky enterprises to secure capital.

4. *There is a gradation of risks.* The shares of a company are varied and graded, so as to appeal to the varying inclinations of different investors. A man may be unwilling to be an ordinary shareholder but may be quite willing to be a preference shareholder. The gradation of risks increases the supply of capital for industries.

5. *Company shares are transferable.* A shareholder can, by selling his shares, withdraw his capital from the company. Thus the funds of a shareholder do not remain blocked. The funds of a partner in a firm or those of the single entrepreneur cannot be withdrawn without winding up the business. [Restrictions on the transferability of shares exist in the case of private companies.] There are organised markets where shares can be sold and purchased, viz., the Stock Exchanges.

6. *Through the company system the savings of a large number of people are collected for productive purposes.* In modern times several kinds of financial intermediaries have developed. Institutions

like banks, insurance companies and investment trusts, collect the savings of the community and invest them in prospective companies. The Unit Trust of India is an example of such an institution. The intermediaries are experts and invest after due enquiry. They are also big operators and can afford occasional losses.

Evils of the Company System. The principal evils of the company system are as follows :

1. *Concentration of Control* : In theory the company system is essentially democratic. It is "a democracy of capitalists, entrusting their surplus funds to a cabinet of their choosing and retaining an active interest in the use to which their capital is put".² In modern times, however, the democratic character has been lost. In most companies a small body of directors control everything. The shareholders are either indifferent or powerless to influence them. A holding of 51 per cent automatically gives control but sometimes even less gives it, because the shareholders are not generally united. There are also various legal methods of acquiring control, e.g., holding companies.

2. *Exploitation by the controlling interest* : The persons controlling a company can so direct policy as to make profits for themselves (for example, by distributing contracts to other companies in which they are interested). The interests of the shareholders in general may be neglected.

3. *Possible laxity in management* : The executives of a company are more interested in their own gain than in the shareholders' profit. The two interests do not always coincide. Company management is very often wasteful and extravagant.

4. *The separation between ownership and management leads to loss of enterprise* : Companies are managed by a hired staff. Such people are usually not inclined to take risks or introduce innovations which may or may not be successful.

5. *Lack of good labour-relations* : In a company there is no personal contact between the owners and the workers. Industrial disputes occur more frequently in companies than in individual proprietorship concerns or partnerships. It is said that "a corporation sole, has no soul". This is frequently seen not only in its dealings with the public but also with labour.

6. *Inefficient staff selection* : Directors and managers of companies are not always chosen on the basis of ability. They are usually relatives or agents of the persons controlling a company and belong to the richer classes.

² Cairncross, *op. cit.*

Conclusion. The company system provides great opportunities to men of ability and enterprise. The system stimulates industrial and commercial development and economic growth. In spite of its many disadvantages, the company system has become the predominant form of business organisation in the 20th century.

CO-OPERATION

Definition. Co-operation is a form of economic organisation where people work together for business purpose on the basis of mutual benefit. "A co-operative society is an association of economically weak persons who voluntarily associating on the basis of equal rights and equal responsibility, transfer to an undertaking one or several of their economic functions, corresponding to one or several of their economic needs, which are common to them all, but which each of them is unable fully to satisfy by his own individual efforts".*

Characteristics. The basic principles of a co-operative organisation are as follows :

1. *Elimination of the capitalist proprietor* : The members of a co-operative organisation own it, work it and share the profits. There is no capitalist proprietor.

2. *Elimination of the middlemen* : In some forms of co-operation the object is to secure goods at low prices by purchasing direct from the primary producer (e.g., the consumers' co-operatives) or to obtain higher prices by selling direct to the consumer (e.g., sales societies). The middlemen are thus eliminated.

3. *Equality* : Co-operative societies are democratically organised on the basis of equality and free association. The object is mutual benefit.

4. *Moral improvement* : In a co-operative organisation there is no employer-employee relation. The association is directly interested in the members or workers and takes steps for their cultural improvement through education and other methods.

Types of Co-operative Societies. The principles of Co-operation can be applied to many fields :

1. *Production* : A group of persons may jointly operate a production unit (e.g., co-operative farming or co-operative industrial undertakings). The profits naturally go to the workers who get increased incomes.

* International Labour Organisation, *Co-operative Action in Rural Life*.

2. *Finance* : Co-operative Credit Societies can borrow money at low rates on the basis of joint security and lend it to members.

3. *Distribution* : Co-operative Sales Societies enable the primary producers to get higher prices by selling direct to consumers thereby eliminating the middlemen.

4. *Consumption* : Consumers' Co-operatives can get goods at lower prices by purchasing direct from the wholesalers or producers.

Advantages of Co-operation. The advantages of the co-operative form of business organisation are enumerated below :

1. It increases the income of the members (in producers' co-operatives they get profits, in sales societies they get higher prices).

2. Consumers' co-operatives and finance societies reduce expenditure.

3. In producers' co-operatives, the conditions of work are better. A sense of proprietorship may increase efficiency. The absence of employer-employee relationship creates a feeling of independence which has great moral effect.

4. Co-operation provides a method of eliminating class-conflict.

Difficulties of Co-operation. There are certain defects of the co-operative method. They are mentioned below :

1. There is a lack of incentive and initiative. Everybody's business is usually nobody's business.

2. It is usually difficult to enforce discipline among workers who are also proprietors. Efficiency therefore is low.

3. Business leadership is essential for success in commercial or industrial ventures. Men of ability usually do not join co-operatives because they can earn higher incomes by independent business.

4. Co-operation to be successful requires the presence of certain qualities in the members, viz., honesty, good faith, industry and commonsense. The general lack of these qualities has limited field of co-operation.

Conclusion. Towards the end of the 19th century, Co-operation was regarded as the ideal remedy for all the evils of capitalism. Experience of its work during the last seventy years, however, seems to show that it can operate successfully only in a limited field. Co-operative credit and consumers' societies have been more or less successful. But co-operative production has generally been a failure except in certain small scale enterprises like dairies in Denmark or farming in certain countries. In India steps are being taken to develop certain types of co-operation e.g., co-operative farming.

RECOMMENDED READINGS

1. Cairncross, *Introduction to Economics*, Ch. 10.
2. E. A. G. Robinson, *The Structure of Competitive Industry*.
3. Samuelson, *Economics* (9th edition), Ch. 3, 6.

EXERCISES

1. What are the functions of the entrepreneur? Estimate his importance in the modern economic organisation.
2. Examine the reason for the predominance of joint companies over other forms of business organisation.
3. Discuss the merits and drawbacks of joint stock companies as a form of business organisation. (C.U. B.A. '64).
4. State and critically examine the distinctive features of Joint Stock Companies. (C.U. B.Com. '64).

CHAPTER 5

SPECIALISATION

DEFINITION

Specialisation means limitation of activity within a particular field. Specialisation is a characteristic feature of modern economic life. No person can produce all the things he wants to consume. The time at the disposal of an individual is limited. So also is his capacity. Therefore, every man confines himself to activities for which he is best fitted. He obtains his requirements by exchanging his own products with those of others. A doctor, for example, does not produce his own food. He buys his food with the money he earns by the exercise of his profession. The kind of limitation of activity is called specialisation.

The principle of specialisation applies also to geographical regions. No region can produce all the goods required by its inhabitants. It produces only those goods for which it has a comparative advantage, obtaining the other goods by exchange with other regions.

By specialisation all parties gain because every person and every region is engaged in what it can do best. The total productivity of the community and the total available consumption goods and services are increased.

Two kinds : There are two main types of specialisation : specialisation of persons and specialisation of localities. The former is called Division of Labour and the latter Localisation. We also find specialisation of capital. Nowadays there are many tools and machines which can be used for one purpose only.

DIVISION OF LABOUR

Definition. Division of labour may be defined as specialisation of persons in particular activities. It is of two kinds : Simple and Complex. *Simple division of labour* means restriction of activities to a particular occupation or trade, e.g., medicine, carpentry or grocery. When work within the same occupation is further subdivided into processes, each process being allotted to a different person, we have what is called *complex division of labour*.

Advantages. The advantages of division of labour are enumerated below :

1. *Specialisation increases efficiency* : It provides the opportunity of developing each man's special talent. Even when there is no talent, constant repetition of the same task increases dexterity and skill.

2. *Specialisation makes labour pleasant* : No two persons have exactly the same aptitude. Under a system of division of labour each man can devote himself only to those tasks which he likes.

3. *Specialisation saves time* : Switching from one job to another wastes time and tempo, continuity in the same job enables work to be done more rapidly.

4. *Specialisation saves tools* : If a person is engaged in more than one task he will require more than one set of tools. Division of labour avoids duplication of tools and enables men to get more work from the same equipment.

5. *Specialisation leads to a greater use of machinery* : Through division of labour industrial processes are split up into separate operations. As soon as a particular operation becomes simplified, a machine is usually invented to perform it.

6. The combined effect of the factors described above is to *make more goods and more leisure* available to society.

7. Division of labour is of *great significance* to the individual because it enables him to work in an occupation he likes and (because he usually become efficient in such work) he is able to earn a higher income. Division of labour is of significance to society because the system leads to greater and better production. Thus both the individual and the society gains.

The Dangers of Division of Labour and Specialisation. Specialisation is not an unmixed blessing. The dangers of specialisation are described below :

1. *Monotony and boredom.* Specialisation, carried to great length, produces certain evil effects on the mind of the worker. There is apt to be monotony and boredom. A change from one task to another has a soothing effect on the mind. A too narrowly specialised worker does not get the chance of such relaxation. He lacks variety which is commonly called the "mother of enjoyment". Multiplicity of task broadens the mind, developing initiative, judgment and resource. A specialised worker tends to have his mind set in a narrow groove.

2. *Interdependence.* Specialisation creates interdependence. A specialised worker is not self-sufficient. He has to depend on others for the fulfilment of his needs. Thus a blacksmith depends on the

agriculturist for his food and the agriculturist depends on the blacksmith for his tools. Self-sufficiency is impossible in modern societies. All citizens are dependent upon one another.

3. *Sectionalism.* Specialisation tends to produce sectionalism in the country. Each group of specialised workers concentrates on its own interest. The common interest of the country and its common culture tends to be in jeopardy.

4. *Unemployment.* Specialisation creates the danger of unemployment. If the market for goods or services turned out by a specialised worker deteriorates or disappears, it is not easy for him to turn to other occupations.

"Division of Labour means Unconscious Co-operation." Persons carrying on different processes in an industry are obviously working towards the same object, *viz.*, production of a good for the satisfaction of human wants. Workers in different occupations or professions are complementary in the sense that each good produced and each service performed is required by all and is available to all. The agriculturist requires finished goods from the manufacturer and the manufacturer requires raw materials and food products from the agriculturist. Thus division of labour may be described as combination or co-operation of labour although any particular labourer may be entirely unconscious of the fact.

"Division of Labour is Limited by the Market." This remark of Adam Smith is rather obvious. Under a system of division of labour many persons work together and the total output is large. If the demand for the product is small it would be useless to produce large quantities and so it would not be possible to employ many persons or divide the process of production into many parts. The size of the market therefore limits the extent to which division of labour can be carried on.

How to Avoid the Evils of Division of Labour. The evils of division of labour may be avoided through certain methods.

1. *Improving conditions of work.* Monotony and boredom can be reduced by improving the conditions of work in factories. Employers can also introduce variety by shifting workers from one job to another whenever the opportunity of doing so occurs. Workers should also be given the chance of promotion to better jobs.

2. *Increasing mobility of labourer.* The danger of unemployment for specialised workers can be reduced by increasing mobility of labourer and by giving general and technical education, so that the workers may avail themselves of alternative employment opportunities.

LOCALISATION OF INDUSTRY

Definition. Localisation may be defined as geographical specialisation within a country. Factories producing similar goods tend to cluster together in particular areas, e.g., jute mills near Calcutta and cotton textiles factories in Western India.

A high degree of localisation occurs when the raw materials and other requirements of an industry are found in particular areas only (e.g., mica mining in Bihar, cotton manufacture in Bombay). Localisation does not occur in industries where mass production and storage is impossible (e.g., bread manufacture or personal service shops like those of barbers).

Areas where the available resources (raw-materials or skill) are small, tend to have specialised industries (e.g., steel production in Chota Nagpur or wheat production in the American prairies). Areas where the available resources are large tend to have many industries. The degree of diversification, i.e., the number and nature of industries in a particular region, depends on its natural resources and the skill of its inhabitants.

Causes of Location. The factors causing localisation of industries are enumerated below :

1. *Natural Advantages.* Some areas are naturally more suited to a particular industry than others, so that its location in that area is advantageous. Natural advantages may be due to the following factors :

- (a) *Suitable soil :* The black soil of Deccan, which is particularly fitted for the production of cotton, accounts for the localisation of the Cotton Textiles Industry in Bombay.
- (b) *Suitable climate :* The humid climate of Bengal and Bombay, which is suitable for spinning cotton, accounts for the establishment of cotton textiles factories in these areas.
- (c) *Availability of power :* Industries tend to concentrate in areas where there is cheap power. In former times industries used to be localised near sources of water power or near the coal producing areas. Nowadays they concentrate near the sources of electricity.
- (d) *Availability of labour :* Industries are generally located in areas where cheap labour is available.
- (e) *Availability of raw materials :* Since movement of raw materials is costly, industries tend to be localised near the source of raw materials e.g., steel works near iron mines, jute mills near the jute producing area.

- (f) *Nearness to markets* : To reduce marketing costs industries are often located near the market. Cottage industries in India producing art products were generally situated in the capital towns where their goods could be sold directly to the richer classes. One of the reasons why the Jute industry of India is localised near Calcutta is that Calcutta is a port from which the overseas buyers can be easily supplied.

Markets and raw materials pull in different directions as regards localisation. Generally speaking, where the raw materials are comparatively more bulky than the finished goods, industries gravitate towards the source of raw materials, e.g., steel industries; in the converse case they gravitate towards the market, e.g., brick manufacture or bread. Where more than one raw material is used or more than one market is supplied, the manufacturer has to consider the varying costs of location at different places and select the cheapest alternative.

2. *Acquired Advantages*. Once an industry develops in an area, subsidiary industries and business spring up near the area thus strengthening the tendency towards concentration. As examples of subsidiary services may be mentioned : transport services, warehouses, banks and industries supplying accessories or utilising the by-products. Labourers knowing the technique of this particular industry tend to settle in the area and become easily available. The manufacturers also can, on account of their nearness to one another, meet and discuss their common problems to the general advantage of all. The area usually acquires a good trade reputation and this again induces new capitalists intending to start similar industries, to establish themselves in the area. Marshall called this "the momentum of the early start". The acquired advantages grow cumulatively and generally increase in course of time.

3. *Relative or Comparative Advantages*. Localisation of industries within a country is usually brought about not by absolute advantages but by relative or comparative advantages. Different industries in a particular area compete with one another for labour, land and capital within the area and those industries which can secure them on favourable terms or which can afford to pay the required price tend to be established there. Thus near engineering towns female labour is plentiful because the engineering industries (which require more strength) employ mostly males. Industries employing a large proportion of females tend to spring up in these areas. The site factor (or land) is also of great importance. In congested towns ground rents are high

and only those industries which enjoy special advantages from being near to the railway stations, docks and labour quarters can afford to remain there. Industries requiring large space usually move out to the suburbs.

Advantages of Localisation. Localisation produces the following advantages.

1. When localisation is due to natural advantages there is a cheapening of the cost of production. Nearness to raw materials, power and market reduces expenses.

2. Localisation leads to the growth of subsidiary industries in the area and they facilitate production and reduce cost. It becomes easier to secure capital and finance.

3. Labour supply is easier because workers tend to move to and live in areas where there is a regular supply of jobs. In course of time they may even acquire some amount of hereditary skill.

4. Localisation facilitates consultation among, and joint action by, manufacturers. There is mutual advantage in joint discussion of common problems.

5. A localised industry generally acquires a trade reputation which facilitates sales, *e.g.*, Sheffield cutlery or Benaras silk.

Disadvantages of Localisation. Localisation has certain disadvantages. They are enumerated below.

1. A localised industry usually provides job-opportunities to some members of a family of workers, not to all. For example, the majority of workers in the iron and steel factories are males. The wives and daughters of such workers find it difficult to get jobs. To make up for this loss of income the workers in such factories demand higher wages.

2. A region dependent on a particular industry is in an insecure position. If, for any reason, the industry deteriorates, the workers suffer from unemployment and distress because there is no alternative source of employment. Unemployment among the workers reduces the sales of shops and establishments supplying their needs. The whole region becomes a depressed area.

3. Too much concentration leads to housing difficulties, congestion and insanitary conditions.

4. Areas with a high degree of localisation cannot be self-sufficient. They have to bring food and other necessities from other areas. If, for any reason, the flow of supplies is disturbed (*e.g.*, by a war) there is great distress.

5. Industries concentrated within a small area, offer easy targets for enemy action during a war. For example, during World War II,

the town of Coventry in Great Britain was completely destroyed and a similar fate overtook many German industrial towns.

How to Avoid the Dangers of Localisation. On account of the dangers and the disadvantages of localisation there is a movement for spreading industries all over a country instead of having them concentrated in particular areas. The policy of spreading industries all over the country is known as Delocalisation. While this will remove some advantages of localisation, there will be less danger of unemployment and distress and there will be uniform industrial development of the whole country. It will also avoid congestion and insanitary dwellings in particular areas.

RECOMMENDED READINGS

1. Cairncross, *Introduction to Economics*, Chs. 6 & 7.
2. Samuelson, *Economics*, (9th edition), Ch. 3.
3. Benham, *Economics*, Ch. VI.

EXERCISES

1. Show how the modern industrial organisation is based upon specialisation as well as co-operation.
2. What are the influences that have brought about the concentration of industries in particular localities? Indicate the chief advantages and drawbacks of such concentration.
3. Explain the significance of division of labour from the individual and social points of view. (Gau. B.A. '64).

CHAPTER 6

THE SCALE OF PRODUCTION

LARGE SCALE PRODUCTION

Firm and Industry. The word Firm is used to denote a particular production unit or trading concern. The term Industry includes all firms producing a particular kind of commodity or commodities easily substitutable for one another, like different varieties of cotton cloth. The Cotton Textiles Industry includes all firms producing cotton textiles. Thus an Industry is a collection of Firms.

Increase of size. The average size of firms has increased considerably in recent times. Whenever possible, production is nowadays carried on in big factories with large capital and a large number of workers. Commercial houses or trading concerns have also increased in size. Small scale production is now found in agriculture, retail trade and a few industries like rice milling.

The size of a firm increases when it uses more capital, labour and other factors of production. An industry increases in size in two ways, viz., (i) by an increase in the *size* of the firms included in the industry and (ii) by an increase in the *number* of firms in it.

Returns to Scale. Increase of scale means that the factors of production are increased in the same proportion. In other words, the factors are kept in constant proportion but the level of operation may vary. See Ch. 10, Laws of Returns.

EXTERNAL ECONOMIES AND INTERNAL ECONOMIES

Increase in the size of a firm and an industry produces certain economies and the cost of production is reduced. These are called the economies of large scale production. Marshall¹ classified such economies into two types : External Economies and Internal Economies.

An External Economy is one which is available to *all* the firms in an industry. [*Examples* : The construction of a railway line whereby transport costs of all firms in the area are reduced ; the discovery of a new machine which can be purchased by all the firms ; etc.] An Internal Economy is one which is *special to a particular firm* and which gives it an advantage over other firms engaged in the industry. [*Examples* : favourable location ; a secret process ; skilled management ; etc.]

¹ Marshall, *Principles of Economics*, p. 266.

Marshall observed that External Economies are "dependent on the general development of the industry." More and more external economies are usually available as an industry grows in size. Internal Economies are, "dependent on the resources of the individual houses of business engaged in (the industry), on their organisation and the efficiency of their management." When the size of a firm increases, internal economies are usually available.

Stigler² is of opinion that, Marshall's external economies form an essentially *historical category*. The development of knowledge and invention, the emergence of subsidiary firms, accumulation of skilled labour etc. produce external economies and they are all characteristics of *growth*. Marshall's chief purpose in creating the concept of External Economy was to explain historical reduction in production costs associated with increase of output. The concept is a useful tool in the explanation of economic development.

THE ECONOMIES OR ADVANTAGES OF LARGE SCALE PRODUCTION

The economies of large scale production are listed below under the two heads, External Economies and Internal Economies.

A. External Economies. External Economies arise from the expansion in the size of an *industry*. Such expansion is usually associated with development of knowledge, new inventions and discovery of new markets. Economic growth and development of the country produce external economies of various kinds. The principal external economies are the following :

1. *Economies of Concentration or Localisation* : When an industry expands, a certain amount of localisation, or concentration in particular localities, takes place. Upon such localisation, certain facilities become available to all firms e.g., skilled labour, cheaper transport and other subsidiary services. The cost of production is thereby reduced.

2. *Economies of Information* : In large industries research work is carried on jointly. Scientific journals are published. Statistical and other information becomes more readily available to all the firms operating in the industry. All these lead to progress and reduction of costs.

3. *Economies of Specialisation* : When an industry grows large, different firms within it, specialise in different processes. For example, in the cotton textiles industry some firms specialise in dhoties, others on shirtings etc. The industry as a whole gains in efficiency and the average cost of production becomes cheaper.

² Stigler, *Production and Distribution Theories*, p. 71.

B. Internal Economies. Internal Economies arise from the expansion in the size of a *particular firm*. The principal internal economies are the following :

1. *Technical Economies* : Technical Economies are those which arise from improvement in the technique of production, i.e., from the use of better machinery and methods of production. Technical economies arise from the following sources.

(i) A large scale firm has the money to buy *big machines*. Big machines are proportionately more productive. For example, a double decker bus carries more passengers than a single decker one but the operating expenses are not proportionately higher. In industries where big machines have been invented, large firms enjoy a technical superiority over small firms.

(ii) Some technical processes are highly productive but are expensive, e.g., some kinds of automations, electronic computing machines etc. Only big firms can use them.

(iii) A large firm can undertake processes *subsidiary* to its main business, thereby reducing costs and improving the quality of the product. For example, an instrument factory may manufacture its own tools and motor manufacturers can run their own casting shops.

(iv) A large firm can *utilise by-products*. The Tatas, for example, use the smoke from their furnaces to manufacture coal tar, asphaltene etc. A small firm's output of smoke is not large enough to justify putting up the capital equipment or machinery needed for the purpose.

(v) In a large firm there can be *increased specialisation of labour*. As a large number of workers are employed, division of labour can be carried further, thereby increasing productivity.

(vi) A large firm can spend more for the *welfare of workers*, e.g., provision of housing. Welfare services increase the efficiency of labour and bring about cordial relations between the workers and the management.

Technical economies increase with the increase in the size of a firm up to a certain point beyond which further expansion produces no further economy. The size of the firm at this point may be called the "Technical Optimum". Expansion of the firm beyond this point can still be carried on by duplicating the technical units (two factories instead of one).

2. *Economies of Management* : When the size of a firm increases, the efficiency of management usually increases because there can be more specialisation in the managerial staff. In a small firm the owner has to manage everything but in a large firm duties may be delegated to hired managers and each department can be put in charge of experts in that line. The overall efficiency is thereby

increased. There is another way in which managerial economies arise. The cost of management does not increase in proportion to the increase in the size of a firm. A person who manages a firm with a capital of Rs. 50 lakhs will certainly be able to manage a firm with a capital of Rs. 100 lakhs. When a firm increases in size, the cost of management, per unit of product, diminishes.

Managerial economies (unlike technical economies) cannot be multiplied indefinitely. Beyond certain limits co-ordination, between the different departments, becomes difficult and the problems of management become too complicated. The supply of businessmen having the requisite capacity of management is limited. At some stage in the firm's growth managerial economies give place to diseconomies. The growth must stop at this stage.

2. *Trading or Commercial Economies* : A large firm can secure economies in its purchases and sales. It can purchase its requirements in bulk and thereby get better terms. It usually secures prompt delivery, careful attention and special facilities from its suppliers. It gets concessions from transport agencies. Because of its larger organisation it can appoint expert buyers and expert salesmen. The trading economies of a large firm are partly due to the superior efficiency of large scale organisation and partly to the superior bargaining power of a large firm.

3. *Financial Economies* : A large firm having large assets can offer better security and is therefore able to obtain better credit facilities both from its suppliers as also from banks. It can also raise new capital, by sale of shares or debentures, more easily.

4. *Reduction of Risk* : A large firm incurs proportionately less risks. A milkman with one cow will lose his business completely if the cow dies but a large dairy farmer can afford occasional casualties. In the case of a large manufacturing establishment, producing a variety of goods, one item may not sell well but the loss may be made up on other items. This can be described as the principle of "spreading the risks". The larger the scale of operations, the wider is the area over which the risks are spread and the smaller is the percentage of risk per unit of investment. The spreading of risk can be done in the following ways :

(i) *Diversification of output*. If there are many products, the loss from the sale of one product may be covered by the profits from the others. By diversification, the firm avoids "putting all the eggs in the same basket".

(ii) *Purchasing raw materials, power etc. from many sources*. This avoids dependence on one source of supply and ensures continuity of production even if one source fails.

(iii) *Diversification of markets*. If the producer depends on one market he may suffer heavy loss if, for any reason, sales in that

market are reduced. This risk is avoided by sending goods to many markets.

Too much risk spreading may involve managerial complications, because the larger the scale of operations the greater is the difficulty of management. A mixed farm, for example, requires better supervision than a farm producing a single crop. Risk spreading may also reduce the technical advantages of large scale production. The technical economies can only be exploited fully if there is continuous production with sufficient capital. Diversification of output may involve discontinuous production which will make the use of large machinery and plant uneconomical. ✓

LIMITS TO LARGE SCALE PRODUCTION

Large scale production suffers from certain *disadvantages*. When the scale of operation is large, management becomes difficult. There is greater reliance on rules and regulations and management tends to be bureaucratic.

A large firm has to be run with hired managers. Such people are naturally more interested in their own *pay and leisure* than in the firm's profit. So managerial efficiency is not always of a high level.

Market conditions and methods of production frequently change. A large firm, because of its complex organisation, finds it difficult to *respond* to these changes. So the management tends to be conservative.

A large firm tends to prefer *mass production* methods. This may lead to deterioration of quality. Also, no attention can be given to the *varying requirements* of different consumers.

The economies of large scale production are *not available to an unlimited extent*. Firms cannot grow in size indefinitely. Although with expansion of size technical economies increase, there comes a time when diseconomies occur in other directions. The diseconomies or obstacles, which prevent the indefinite expansion of firms, are explained below.

1. **Difficulties of Management.** As a firm expands, complexities of management increase. In industries requiring constant supervision over details and rapid "decision taking", managerial difficulties are great and the size of the firm tends to remain small, *e.g.*, in retail shopkeeping, agricultural farms and fashionable tailoring. In these industries individual supervision and direction—the "economy of the master's eye"—is of special importance.

Industries which can be reduced to routine can be expanded considerably without producing managerial diseconomies, *e.g.*, railways, post offices or electricity production. In these industries "policy making" or "decision taking" covers a comparatively narrow range.

In modern times the technique of management has been facilitated by the development of certain new sciences, *e.g.*, cost accounting, personnel management, new office equipments, etc., which enable complex problems to be handled satisfactorily. But there are industries where these methods are inapplicable or where they do not solve all problems. The small scale firm persists in such industries.

The real reason why managerial diseconomies arise is that there is a limit to human capacity. Expansion of the scale of a firm, beyond a reasonable level, produces problems too big in range and complexity for the average businessman to handle. Outstanding managerial ability is not plentiful. Marshall explained the persistence of small enterprises (in spite of the great internal economies of large scale production) by the fact that when able businessmen die they are succeeded by descendants of inferior calibre.

2. Market Limitations. If the market for a particular product is small, there is no scope for large scale production and the firms tend to remain below the optimum size. The market obstacles are of two types : (i) geographical and (ii) psychological.

In some industries centralized production is impossible because the consumers are scattered and the cost of distribution is proportionately too high, *e.g.*, bakeries, furniture making etc. In some cases the raw materials are widely scattered and it is too expensive to collect them at a central site and production tends to be carried on in small local factories, *e.g.*, saw mills, rice mills etc. In these industries distance protects the small firm from competition.

The psychological barriers to expansion arise largely from what is known as "product differentiation". The products of different firms in the same industry differ slightly from one another. Each firm has its own trade name or "brand" and is patronised by people within its sphere of influence. The market is broken up into groups by the tastes, habits and prejudices of the consumers. Large firms even though technically more efficient (and therefore able to sell at lower prices) find it impossible to displace the small firms from their hold on the market.

The market obstacles to expansion can be overcome in two ways (i) by setting up branch factories in different localities to avoid transport difficulties and (ii) by manufacturing a wide range of products. Neither of these methods is satisfactory. As regards the first, multiplication of branches sooner or later gives rise to managerial difficulties. As regards the second, if a firm attempts to produce all varieties of a commodity it will end by producing everything on a small scale, thereby incurring higher costs of production.

3. **Scarcity of factor supplies.** A firm's expansion might be checked by the inability to obtain adequate supplies of one or more of the factors of production—raw materials, labour or land.

4. **Difficulties in getting finance.** The difficulty of obtaining sufficient capital frequently prevents the expansion of small firms. In modern times the growth of the company system has avoided this difficulty to some extent. Sometimes, the real problem is not shortage of money capital but scarcity of capital goods.

WHY A FIRM GROWS : MOTIVES AND CAUSES

Large scale production is the characteristic feature of modern industrial organisation. The individual firm tends to expand in size by introduction of new plant and machinery and by amalgamation with other firms. The principal *motives* leading to expansion of size are the following :

1. *Desire for Economy* : Large scale production is economical. Therefore, there is a tendency towards expansion.

2. *Desire for Profit* : Large scale production is more profitable than small scale production.

3. *Desire for Power* : A desire for economic power sometimes leads to expansion. Control over a big firm carries with it power and respect, which are great incentives to able men with ambition. Sometimes this motive operates in the opposite direction. Since power springs from independence, small firms sometimes refuse to combine, preferring low profits and independence to high profits with a subordinate position in a big merger.

4. *Increase of Demand* : The demand for goods has increased because in almost every country population is increasing at a rapid rate. The standard of living of the people is improving and they want more and better goods and services.

5. *Increased Facilities* : Large scale production has been facilitated by invention of new machines and processes. Development of the transport services facilitates import of raw materials from great distances and the export of goods to distant markets. The development of Joint Stock Companies has made it possible to mobilise large sums of money for industrial and business purposes.

✓ DIFFERENT TYPES OF GROWTH OF A FIRM

Increase in the size of a firm—whether by individual expansion or by 'Amalgamation'—may be accompanied with structural changes or changes in its scope of operation. The term "Integration" is generally used to denote the addition of new products and processes to a

firm's activities. The converse process—abandonment of some product or process—may be called "Disintegration".

Integration may occur in various different ways which can be classified as follows :

1. **Horizontal Integration or Combination.** Horizontal integration means extension of plant and increase of output without change of product or process or, combination of different firms producing identical products, e.g., a colliery sinking a new mine or combining with another colliery. Horizontal integration is the usual and normal method of growth of a firm. The usual motives are to secure economy and/or monopoly power.

Advantages and disadvantages. Horizontal integration has many advantages. It increases the scale of operations and thereby produces technical, managerial, commercial and other types of economies. It gives power and prestige to the firm which generally increases the market for its products. The disadvantage of horizontal integration is that it sometimes introduces too many complexities in production and may lead to managerial diseconomies.

2. **Vertical Integration or Combination.** Production of a commodity involves a number of processes which are sometimes carried on by different firms. For example, production of steel requires mining iron ore, preparing pig iron and then converting the pig iron into steel. When one or more of these sequence of processes are combined under the same firm there is said to occur vertical integration. (*Examples* : a steel factory purchasing an iron or coal mine ; a publisher starting a printing press.)

Advantages. Vertical integration secures certain *technical economies* and *reduces the risks of production*, e.g., it protects the firm against failure of raw material supplies or rise in their prices. It also safeguards the firm from being squeezed by a combine which may be formed to control the raw materials. Vertical integration also occurs as a reaction to the threat of monopoly, e.g., many British film producers directly operate cinema houses to fight American films. Sometimes vertical integration is adopted as a method of expanding a monopoly or putting pressure on competitors threatening monopoly.

Unified control over successive stages of production enables proper synchronisation of the processes and the introduction of methods which are beneficial to all the processes. If the different stages are under different ownership conflicting interests may arise preventing the use of the best methods. Integration enables better and more comprehensive planning and thus reduces cost of production.

Disadvantages. The development of vertical integration is frequently *obstructed* by lack of capital, lack of familiarity with the technique of production of the other stages and the tendency toward

specialisation within a certain range of processes. Vertical integration is therefore less frequent than horizontal integration.

3. **Lateral Integration.** Lateral integration means increase in the number and variety of products. For example, when a railway company starts hotels, steamers, or a bus service we can call it lateral integration. The motives, for this type of integration, are additional profit, spreading of risk, or extension of monopoly.

4. **Territorial Integration.** Territorial integration means the starting of new branches or combination with other factories in other localities. The process may also be described as "diffusion". The chief examples are chain stores, electricity companies and bus syndicates. Territorial integration usually occurs to tap local markets or to reduce transport costs.

ECONOMIES OF SMALL SCALE PRODUCTION

Although large scale production is the predominant feature of modern industrial organisation, small scale production has not been eliminated. Even in highly industrial countries, like U.K. and U.S.A., there exists a substantial small scale sector. The persistence of small scale production can be explained by the fact that in certain industries small scale production is economically advantageous.

Advantages. The circumstances under which small scale production is advantageous are explained below.

1. **Difficulties of Management.** In some industries management becomes difficult when the scale of production is large. In agriculture, for example, detailed supervision is necessary and such supervision cannot be delegated to hired workers. There are some industries where rapid "decision taking" is necessary, e.g., repair shops or fashionable tailoring. In such industries the scale of production tends to remain small.

2. **Less scope for Machines.** In some industries there is little scope for using large machines, e.g., carpentry or watch making. In such industries the technical economies of large scale production are not available and therefore the small scale unit of production is *not* uneconomical.

3. **Personal Relations.** In a small establishment the proprietor can devote his personal attention to all aspects of the business and thereby prevent waste. This is known as the "Economy of the Master's Eye".

4. **Quality Production.** A small producer can vary his products to suit the requirements of individual customers. He can also produce artistic goods. In a large firm, using mass production methods, more attention is given to quantity than to quality. A small producer

can devote more attention to quality. Hence small scale production is particularly suitable for art-products and products which require to be varied according to the different tastes of different customers.

5. *Perishable goods.* In the case of perishable goods (like bread or milk) large scale production is impossible because the articles cannot be sent to distant customers.

6. *Cost of Transportation.* If some industries the cost of transporting the finished goods is too large (e.g., bricks). In such cases a firm can supply goods only within a restricted area and hence the scale of production remains small.

7. *Good Labour Relations.* The small producer can usually maintain close *personal contact with his workers* and thereby avoid industrial disputes. Labourers prefer to work in small establishments because the work is generally less strenuous than in large establishments.

8. *Labour-intensive.* A small scale production unit is labour-intensive, i.e., it uses comparatively more labour and comparatively less capital than large production units. Small scale production is therefore particularly suitable for underdeveloped countries, like India, which have an abundant supply of labour and a small supply of capital. Government policy in such countries is to encourage the development of small scale production.

Disadvantages. The main disadvantage of small scale production is that it is comparatively more *costly*. Small scale production units cannot avail themselves of the technical economies of machinery and modern processes or the commercial and financial economies of large scale production. They cannot therefore produce goods as cheaply as large production units. In industries where there is little scope for technical and other economies, small scale production is appropriate.

Conclusion. The advantages of small scale production, enumerated above, account for the fact that large scale production and small scale production co-exist in every country, including the highly developed ones like U.S.A. and U.K. In Japan and many other countries, large scale firms buy from small firms, component parts of their products. For example, the auto makers of U.S.A. purchase various gadgets like safety belts and clocks from other firms. Japanese bicycle manufacturers purchase parts from small firms. Such practices are convenient and economical. This is also a reason why large scale production and small scale production can exist and grow together.

THE OPTIMUM SIZE OF A FIRM

The word Optimum means the 'best'. When a firm expands, the different types of economies of large scale production do not increase

simultaneously or in the same proportion. At some stage, expansion of scale increases technical economies but produces managerial diseconomies. Diversification of output reduces risks but may diminish technical economies. A firm working with a profit motive has to calculate the economies and diseconomies accompanying a particular scale of production. Expansion of scale usually goes on so long as the net effect on costs is favourable, *i.e.*, so long as the economies exceed the diseconomies. The size of the firm, at the point *where the net economy is maximum*, is called its optimum size.

Bye and Hewett¹ define the optimum business unit as, "that organisation of business enterprise which, in given circumstances of technology and the market for its product, can produce its goods at the lowest average costs in the long run". An efficient firm will fix its scale of operation at this point.

The optimum size of a firm *varies from industry to industry and from time to time*. The size depends upon the economies that can be secured and the diseconomies that have to be suffered at the different possible scales of production. E.A.G. Robinson² has classified the possible economies and diseconomies of scale under the following heads : Technical, Managerial, Financial, Marketing, and Riskbearing. Technical considerations may require the use of heavy equipment in some cases and light inexpensive ones in other cases. Management is sometimes simple, requiring the use of a few executives and sometimes complex, requiring the use of a large supervisory staff. The market may be wide or may be localised. It may be stable or it may be liable to wide fluctuations. Every firm has to take into account all these and many other factors and fix the scale of operations appropriate under the circumstances.

It is to be noted, however, that firms *do not always grow to their optimum size*. The output of such a size may be too large to be sold profitably. The aim of a firm is maximum profits, not maximum efficiency. Usually maximum profit is secured by working at that scale *where cost is minimum* but it is not necessarily so always. It can be shown that, under competitive conditions a firm gets maximum profits when its scale of operations is so fixed that its marginal cost of production is equal to the market price. Under monopoly and imperfect competition, profits are maximum at the level of output where marginal cost is equal to the marginal revenue. (See Ch. 12).

¹ Bye and Hewett, *Applied Economics*, Ch. III.

² E. A. G. Robinson, *The Structure of Competitive Industries*.

RECOMMENDED READINGS

1. E. A. G. Robinson, *The Structure of Competitive Industry*.
2. Cairncross, *Introduction to Economics*, Chs. 8 & 9.
3. Benham, *Economics*, Ch. VIII.

EXERCISES

1. What are external economies? Give suitable examples (C.U. B.Com. '71.)
2. Mention the main economies of large scale production and explain their meaning. (Gau. B.A. '64.)
3. Small and large firms are often found to exist and grow together. Can you give reasons for the possibility of their co-existence and growth? (Gau. B.A. '64.)
4. Distinguish between vertical and horizontal combinations and examine their advantages and disadvantages. (C.U. B.Com. '70.)
- † 5. Discuss the factors that tend to limit the size of a firm. (C.U. B.Com. '73.)
- † 6. Discuss the factors determining the size of business units. (C.U. B.A. '55; Gau. B.A. '60; B.Com. '63.)
- * 7. Write a note on optimum firm. (C.U. B.Com. '72.)
8. Distinguish between the chief types of industrial combinations and indicate the factors which favour their growth (C.U. B.Com. '72.)

CHAPTER 7

INDUSTRIAL COMBINATIONS AND MONOPOLY

MONOPOLY

Monopoly exists when a single concern controls the supply of a commodity or service. The Calcutta Electric Supply Corporation is a monopoly because no other concern can supply electricity to the people of Calcutta.

Causes of Monopoly. *The foundations of monopoly control over supply or monopoly power rests on (i) absence of substitutes, and (ii) restrictions on the entry of competitors. The main causes of monopoly are stated below.*

1. *Lack of substitutes.* If the product of a firm has *no substitute*, there is absolute monopoly. Such cases are rare. Usually every commodity has a substitute. For example, electricity can be substituted by kerosene oil. But kerosene oil is not a good substitute for electricity. People will pay more and use electricity rather than use kerosene oil. Therefore, the sole supplier of electricity can be called a monopolist even though there are substitutes of electricity. In Economics a concern is called a monopoly if its product has no good (or near) substitute.

2. *Barriers to entry.* Restrictions on the entry of new producers into the market is an essential condition of monopoly. We cannot describe the producer of an article as a monopolist if it is possible for other concerns to produce the same article. Restrictions on new entry may be due to *natural, legal or economic reasons*. There are certain commodities whose supply is limited by nature. In such cases the concern which owns the limited source has an absolute monopoly. Sometimes the law prevents entry of new competitors (*e.g., in the case of patented products*). Sometimes new entry is prevented by the fact that *a large capital equipment* is needed for producing an article and nobody likes to enter and compete with the established concern. A *secret process* of production may give monopoly power.

3. *Monopolistic Competition.* Producers of goods with special trade names, like X chocolates or Y motor cars, enjoy some amount of monopoly power. These cases come under what is known as monopolistic competition. (See Ch. 11).

4. *Necessary Monopolies.* In the case of certain goods and services, widely used by the public, like electricity, transport and

water-supply, competition is wasteful. Production in such cases is entrusted to monopolies created by the state. These are known as *Public Utility Services*.

5. *Voluntary Associations*. Monopoly power is possessed by *labour organisations* like Trade Unions and *associations* of professional men, like doctors and accountants. Trade Unions and professional associations can control the supply of the services of their members and therefore have monopoly power.

6. *Monopolistic Combination*. A monopoly may arise either by the growth and expansion of a single firm or by a combination of all the firms producing a particular commodity.

CLASSIFICATION OF MONOPOLIES

Monopolies can be classified as follows :

1. *Natural Monopolies*: A natural monopoly exists when the supply of a commodity is limited by nature and a single concern owns the source, *e.g.*, the diamond mines of De Beers Company in South Africa.

2. *Legal Monopolies*: When the law prevents duplication or imitation of a particular product a legal monopoly arises, *e.g.*, patents and copyrights.

3. *Necessary Monopolies*: These are monopolies deliberately created by the state to prevent wastage of capital equipment and to secure cheap supply of certain essential commodities, *e.g.*, electricity, waterworks, railways etc. These are also known as *Public Utility Services*.

4. *Temporary Monopolies*: Sometimes speculators manage to secure control over the whole existing supply of a commodity, *e.g.*, a 'Corner'. Such monopolies are necessarily shortlived.

5. *Monopolistic Combinations*: These are monopolies created by the combination of all or almost all the producers of a particular commodity in a country. In modern times this is the usual way of forming a monopoly. This type of combination can also be described as *voluntary monopoly*. Such combinations are formed through agreements (formal or by mutual understanding), cartels, trust and holding company.

MONOPOLISTIC COMBINATIONS

Different firms may join together and form a big unit controlling the market of an article. Such big units are called *Monopolistic Combinations*. It is not necessary that all the firms producing the article should join the combination. If a substantial number join, so that the combination has influence over the price, it is called a *monopolistic combination*. Some combinations are loosely joined together, some

are united by strong bonds. We can classify monopolistic combinations, according to the degree of unification, as follows :

1. *Combinations Constituted by Mutual Understanding.* Different firms may be connected with one another through common shareholders, common directors and interlocking directorates. These personal links very often lead to common policies regarding production, wages and prices. In addition to personal links, there are other factors which lead to the formulation of common policies. These are trade etiquettes or mutual understandings. Adam Smith observed long ago that, "people of the same trade seldom meet together even for merriment and diversion but the conversation ends in a conspiracy against the public or in some contrivance to raise prices."

2. *Combinations Constituted by Formal Agreements.* Different firms very often enter into formal agreements regarding prices to be charged and markets in which the products are to be sold. "Shipping conferences" or "Rings" which are associations of shipowners controlling freights, is an illustration of this type of agreements. Industrial Pools have similar objectives. They arrange for joint marketing and thereby avoid price competition. As prices cannot be kept high unless production is kept low, very often there are also agreements to restrict output, each firm being allotted a production quota. Such agreements sometimes amount to agreements in restraint of trade and are unenforceable in a court of law.

3. *Cartels.* A cartel is an association of independent firms following the same line of business or production and formed for the purpose of mutual protection and advantage. The cartel does not interfere with the internal management of the firms but regulates their output according to a prearranged formula, fixes the prices and arranges for marketing the product. Cartels existed in large numbers in prewar Germany. Some exist now in U.K. and U.S.A. The Indian Sugar Syndicate was an example of cartel in India. A cartel, formed by agreement, may come to an end at any time.

4. *Trusts.* Originally the term 'trust' was used to denote a form of combination in which the shareholders of a number of companies turned over their shares to a board of trustees which was empowered to act for them. Nowadays the term is used to denote any organisation in which a number of firms are legally united and, which is large and strong enough to exercise powers of monopoly. A trust may be formed by amalgamation of a number of firms or by the transfer of the controlling interest over a number of firms to a single firm or individual. In case of amalgamations the component firms lose their identity and their separate legal existence. But in the case of trust formed by unification of controlling interests the different components may retain their separate legal-existence and some amount of independence.

5. *Holding Company.* This is a method of getting control by one company over a large number of other companies. The controlled companies are called the Subsidiary Companies. Owning fiftyone per cent of the shares of every subsidiary companies, and sometimes less voting power, is enough to control the management or policy of the subsidiary companies. By this method "Pyramiding" of control is secured. The controlling company is called the Holding Company.

6. *Amalgamation.* The merger of competing firms brings into existence a monopolistic combination.

ADVANTAGES OF MONOPOLY AND MONOPOLISTIC COMBINATIONS

A monopoly is not necessarily an evil institution. Certain *economic advantages* can be secured from a monopolistic organisation of industry. They are as follows :

1. **Technical Economies.** In industries where the technical advantages of large scale production are great, full concentration or monopoly will produce maximum efficiency and minimum cost. A monopolistic combination can reorganise production, scrapping inefficient units and specialising other units according to requirement. A monopoly therefore leads to technical economies. This argument however is subject to certain qualifications. The monopolist may continue production as before without reorganisation. The concern may become too large and unwieldy, thereby producing managerial diseconomies. Lastly, the monopolist may become slack, once control over the market is *assured*.

2. **Other Economies.** A monopoly, being ordinarily a large scale organisation, can secure all the usual advantages of large scale production, viz., managerial, commercial, risk-bearing and financial economies. The selling costs are also lower because competitive advertisements can be avoided. A monopoly brought about by combination involves pooling of technical knowledge and patents which reduces cost.

3. **Public Utility Services.** In some industries monopoly is a social necessity. If services like railways, waterworks or electricity plants were competitive there would be unnecessary duplication of capital equipment and costs would be high. The state usually enforces monopoly in such services.

4. **Stability of Output.** Some writers claim that monopoly promotes stability of output and prices. Under a monopoly overproduction is not possible. This, however, is true of large scale production and not of monopoly as such.

5. **Technical Progress.** Monopolies can afford to undertake research and thereby promote technical progress. But very few actually do so.

6. **Commodity Control Agreements.** Agriculturists and cottage workers are usually much poorer than the consumers of their products. Commodity control agreements intended to restrict output and raise the prices of such products are beneficial to large numbers of people and are sometimes brought about by Government efforts. (*Examples* : the jute restriction scheme which operated in Bengal during the 1930's ; cartelisation of cottage industries in Japan in 1931, etc.).

7. **Over-entry.** Too many entries in an industry creates many problems. It creates "sick industry". In a depressed industry there occurs lay-off, lock-out, strikes and unemployment. These circumstances can be remedied by some forms of combination; e.g. a Cartel or Amalgamation. A full scale monopoly will revitalise the sick industry.

DISADVANTAGES OR EVILS OF MONOPOLY

A monopoly is generally anti-social. It leads to the following great evils :

1. **High Prices.** A monopoly can secure economy in various ways but these economies are (except in the case of public utility services or government monopolies) never passed on to the consumers in the form of lower prices. Under monopoly, prices are higher and total output lower, than under competition.

2. **Reduction of Economic welfare.** Monopoly gives excess profits. Therefore it increases inequality of income which reduces the economic welfare of the community as a whole.

3. **Possible Inefficiency.** Once a monopolist is sure of his power he becomes slack. Removal of the spur of competition takes away the incentives towards economy or efficiency. Therefore monopoly brings *stagnation of production*.

4. **Exploitation.** A monopoly with its superior bargaining power can take unfair advantage of its suppliers and associates. Labour is exploited along with the consumer.

5. **Price discrimination.** Monopoly leads to price discrimination. It creates exploitation of consumers.

6. **Unfair Practices.** The power and resources of a monopoly are frequently used to prevent new entries in the field. Price cutting, rebates, drawbacks and sometimes illegal methods are used to choke off potential competitors. Although legally entry is free, no new firm would take the risk of coming in. This applies particularly to industries where a large initial outlay is necessary to start a competing establishment. Monopoly therefore restricts enterprises.

7. *Political Corruption.* The enormous resources of modern monopolies are sometimes used to corrupt members of the Government and officials in order to obtain unfair advantage.

8. *Prices under imperfect competition.* A monopoly formed by agreement (e.g., a cartel) divides the business so that large firms produce on a smaller scale and inefficient firms are kept alive. In such cases as Chamberlin¹ points out, the price paid by the consumer may be higher than that in a complete monopoly like a trust.

WHY MONOPOLISTIC COMBINATIONS ARE FORMED

Causes. A monopolistic combination is usually formed for the purpose of securing higher prices and monopoly profits. A monopolist controls the market and can charge such prices as will yield to him the maximum possible net revenue. He can also force his suppliers to accept lower prices. He usually possesses sufficient bargaining power to keep the wages of its workers at a low level. Monopolistic Combinations are also formed with objects which are not primarily pecuniary. The causes that lead to the formation of monopolistic combinations are listed below.

1. *Economy.* A combination may be formed for the purpose of securing economy. A monopoly can always reduce selling costs (costs of advertisements and salesmanship). Economies can also be secured by specialising different units of the combination to different varieties of the product and, if necessary, totally stopping production in the inefficient units.

2. *Defence.* Combinations are sometimes formed in self defence. Producers in a country sometimes combine to meet aggressive foreign competition. In U.K. for example, the Imperial Chemical Ltd. was formed to fight the German Chemical trust. Combinations may also be formed to keep out new competitors. Sometimes they arise from a desire to cope with monopolistic combinations of the suppliers of materials or services to an industry.

3. *Reduction of risks.* Combinations are sometimes formed to reduce the risks of competition. Under competition there is always a risk of failure. One way of avoiding this risk is to form monopolistic combination.

4. *Enforcement by law.* Combination may sometimes be enforced by law. In public utility services like railways or electricity supply companies competition is wasteful and monopoly is desired in the public interest.

5. *Power and Prestige.* Monopolistic combinations frequently originate from the desire for power and prestige. As Taussig² puts it,

¹ Chamberlin, *Theory of Monopolistic Competition*, p. 105.

² Taussig, *Inventors and Money Makers*.

"The instinct for domination plays a considerable part in the movement for combination. (Industrialists) talk of the economies of large scale operation and consolidation, of the wastes of competition, of better service, lowered prices, and what not. But in truth the schemes for over-powering combinations are to a great degree mere manifestations of megalomania."

6. *Large profits.* The most important motive of combination, however, is the desire for larger profits obtainable by exploitation of the consumer and labour. Monopolistic combinations therefore almost invariably lead to higher prices and "profiteering".

Checks. The tendency towards monopolistic combination is held in check by various forces of which the most important are public opinion, the possibility of substitutes and potential competition. (See "The limits to the power of a Monopolist", Ch. 14.)

Countervailing Power. The checks on private power of corporations formerly came from competition (seller v. seller). In advanced capitalistic economy nowadays (e.g. in U.S.A.) the checks come from the opposite sides of the market (seller v. buyer). The checks come from the following factors : (i) the market power of other companies, who supply goods to them ; (ii) big purchasing agents to bargain down the prices and keep the profits in check ; and (iii) the power of trade unions and similar organisations. Therefore monopoly power is never absolute power. It is checked by the factors mentioned above. Prof. Galbraith calls it the phenomenon of "Countervailing Power". Galbraith recognises that the restraints mentioned above do not apply if the rival organisations are not powerful and when there is inflationary pressure.³

CONTROL OF MONOPOLY

Control of monopoly is necessary in the public interest. Various methods of controlling monopolies have been tried but unfortunately no method has yet been found which is completely successful. The measures which have been tried are mentioned below.

1. *Measures for protecting the Consumer.* Monopolies exploit consumers by charging high prices, supplying inferior products and other methods. Attempts have been made to protect the consumer through the following measures :

- (a) fixation of maximum prices ;
- (b) fixation of limits to monopoly profits ;
- (c) forcing the monopolist to maintain reasonable quality standards ; and

³J. K. Galbraith, "American Capitalism" and "The Affluent Society".

- (d) ensuring publicity of the monopolist's actions so that the public may be aware of what he is doing and take action if necessary.

All the four methods mentioned above are generally used in the case of public utility undertakings under private management. As regards other monopolies all these methods have been found ineffectual in practice. It is difficult to calculate what is fair price and fair profit. Also regulations fixing ceiling prices and ceiling profits are difficult to enforce.

2. *Measures for restoring competition.* The barriers to entry should be reduced as much as possible. The fear of potential competition may keep monopoly price down.

Monopolists adopt various methods of preventing the entry of new firms into the industries controlled by them. The methods are very often unfair and occasionally illegal. To facilitate new entries, which would lead to the emergence of competitive conditions in a market controlled by a monopolist, the following methods can be tried : (a) prevention of unfair practices and unfair competition ; (b) removal of obstacles to entry ; and (c) payment of subsidies to new firms from monies obtained by taxing monopolies.

Experience shows that unfair practices cannot be eliminated by legal measures alone. It is difficult to define what is unfair practice. Reduction of price is not always unfair, for its object may be to attract new customers. In the case of transport companies rebates and drawbacks, allowed to parties on condition that they do not use a rival service, are generally regarded as unfair and may be prohibited. But it is difficult to enforce such laws.

Removal of obstacles of the entry of new firms into the industry is a good method of restoring competition. Unfortunately the chief obstacle to new entry is the necessity of investing money in an industry already controlled by an established monopolist. There is a general disinclination to take the risk. Payment of subsidies to such new entrants by the government may be helpful.

3. *Legal steps.* In U.K., the Restrictive Practices Act of 1956 provides for the registration of all restrictive agreements (*i.e.*, agreements restricting output or fixing prices). There is a court, called the Restrictive Practices Court, which can examine any such agreement and declare it void if it is against the public interest. The object is to maintain competition by removing restrictions on output and monopolistic price fixation. The Monopolies Commission, set up under an Act of 1948, deals with matters like single-firm monopolies.

In U.S.A. there are laws against the formation of monopolistic combination *e.g.*, the Sherman Act (1890), the Clayton Act (1914) and the Federal Trade Commission Act (1914), the Celler-Kefauver

Antimerger Act (1950). The enforcement of these laws depends on the policy of the party in power at the time it is. Since 1945 the Supreme Court of U.S.A. orders the break-up of monopolistic companies (*e.g.* the Aluminium Company of America) into several small companies.

In India the Government has passed the Monopolies and Restrictive Trade Practices Act (MRTPA) in December, 1969. The MRTP Act came into force from June 1, 1970. It has the following objectives (i) to ensure that the functioning of the economic system does not lead to the concentration of economic power to the common detriment and (ii) to control such monopolistic and restrictive trade practices as are harmful to the public welfare.

4. *Nationalisation.* Perhaps the most effective method of breaking up a monopoly is to bring it under popular control by nationalising it. This policy may be followed in countries where there is a nationalised sector in the economy (*e.g.*, in India and in Great Britain). There are countries, however, where the people favour private enterprise too strongly to permit nationalisation (*e.g.*, U.S.A.). In all capitalist countries, monopolists occupy a privileged position because of their wealth and can resist the passing of the laws necessary for their nationalisation.

RECOMMENDED READINGS

1. Phelps Brown, *A Course in Applied Economics*, Chs. II & III.
2. Cairncross, *Introduction to Economics*, Chs. 11 & 17.
3. Benham, *Economics*, Ch. XXII.

EXERCISES

1. Write a short note on the foundations of monopoly power and summarise the economic case against monopolies. (C.U. B.Com. '63.)
2. Mention the main types of business combination and point out their characteristic features. (Gau. B.A., '64.)
3. Distinguish between the chief types of industrial combinations and indicate the factors which favour their growth. (C.U. B.A. '61; B. Com. '72; Gau. '63.)
4. How are monopolies formed? State how they can be controlled in the interest of social goods. (See C.A. Final Nov. '72.)

CHAPTER 8

CONSUMPTION, UTILITY AND DEMAND

CONSUMPTION AND WANTS

Definition. Consumption means the utilisation of goods and services for the satisfaction of human wants. It is the process through which human wants are satisfied. Consumption is the object of production. Goods and services are produced in order that they may be consumed. Some goods are consumed by a single use, *e.g.*, an apple. Some goods are enjoyed over a period of time, *e.g.*, a chair or house. The latter type of goods is called Durable Goods.

Consumption does not involve destruction of matter. When an apple is eaten, the matter contained in it is not destroyed; only its form is changed. But an apple which is consumed has lost its utility. Similarly a chair, after a period of time, may no longer be usable as a chair. We can say that such matter has lost its "utility" or want-satisfying power. Hence, the process of consumption involves destruction of utility, not destruction of matter.

Nature and characteristics of wants. Human wants are varied. They differ in different places and in different communities. They have also differed at different times. The wants of men in the medieval ages were quite different from what they are in modern times. Broadly speaking we can lay down the following characteristics of human wants.

1. Human wants, as a whole, *are unlimited*. There is no end to human desire. As soon as one want is satisfied, a fresh one arises and takes its place. Again, every want leads to efforts to satisfy it. The efforts develop new powers in man and new types of production. These again lead to new wants.

2. Each *particular* want is *limited*. The quantity of a commodity or service which a man can enjoy at a particular time is limited by his bodily and mental powers. For example, the amount of food which a man can eat in a day is strictly limited. Marshall called this the Law of Satiable Wants. The Law of Diminishing Utility follows from this law.

3. *Wants are competitive*. Different wants exist simultaneously and all of them cannot be satisfied at once. For example, a man may want to go to a cinema and also to see a football match. He cannot, at the same time, do both. A man may not have money to buy a

radio set and also a watch. In such cases the problem of choice arises. Each man decides such problems according to his preferences and his income.

4. *Wants vary in their intensity.* Some wants are very urgent. Others can be postponed.

Economic significance of human wants. Human activities spring from the endeavour to satisfy human wants. Wants therefore give rise to activities. The converse of this proposition is also true. Discovery of a new product or the invention of a new style frequently stimulates desire and increases consumption. Thus the relationship between production and consumption is one of interdependence.

TYPES OF CONSUMPTION GOODS

The goods and services which satisfy human wants can be divided into three classes as follows :

1. *Necessaries* : Necessaries include things which are *essential* and which must be consumed. Necessaries can again be divided into three classes : (a) *necessaries for existence, i.e.,* the minimum amount of things necessary to sustain life, (b) *necessaries for efficiency, i.e.,* goods and services the consumption of which is essential for maintaining working capacity at a high level and (c) *conventional necessities, i.e.,* goods and services which are not necessary for maintaining life or efficiency but which are intensely desired from custom or force of habit, *e.g., tobacco*. Men frequently sacrifice other necessities for getting them.

2. *Comforts* : Comforts include goods and services (beyond the 'necessaries' level) which lead to easy living. Comforts may increase efficiency but are not essential to it.

3. *Luxuries* : Luxuries are goods and services which do not add to efficiency. They satisfy superfluous wants and may sometimes be harmful to efficiency.

Goods and services cannot be rigidly separated into the different categories mentioned above. The classification is relative to time, place and the level of income. What is luxury to a poor man may be a necessity for a rich man. What is necessity in cold climates may be entirely superfluous in the tropics. Nevertheless the classification is useful because it points out the three main types of consumption goods. The standard of living of the people living in a country can be judged by the amount of necessities, comforts and luxuries they enjoy.

Is Consumption of Luxuries Justified ? Luxuries include articles the consumption of which does not add to efficiency. But they must not be condemned on this ground alone, for luxuries *provide pleasure*

which is certainly one of the objects of living. Human beings must not be thought of as worker-ants having no function beyond production. Many of the best things of life, like art and culture, originate from the luxury motive. A desire to enjoy luxuries is a great *incentive to work*. Since economic progress depends on hard work we cannot ignore any factor which adds to incentives. It is sometimes argued that consumption of luxuries is justified because it *provides work and employment*. This argument is fallacious because by proper planning the same employment may be diverted to the production of necessities. The economic justification of luxuries lies in the incentives that they provide to enterprise.

The aforesaid arguments apply to harmless luxuries. Consumption of harmful luxuries (e.g., wine) cannot be justified under any circumstance.

RELATIONSHIP BETWEEN CONSUMPTION AND INCOME

Engel's Laws. Extensive studies of family budgets show that, although different persons spend their incomes in different ways, there is a remarkable similarity as regards the general pattern. A nineteenth century German statistician named Ernst Engel found that the following rules can be laid down regarding expenditure :

1. The smaller the income the greater is the percentage of it which is spent on food. The average income of a poor class family is so low that expenditure on food covers most of it. Food is the primary necessity and must be purchased at all cost.

2. The expenditure on food does not increase in the same proportion as increase of income. The higher income groups spend proportionately less on food than the lower income groups. But the percentage of income spent on education, health and personal services, increases with increase of income.

3. The percentage spent on clothing, rent, heat and light is more or less the same at all levels of income.

The above rules, confirmed by many subsequent investigations, are known as Engel's Laws.

The Propensity to Consume. The lower income groups usually find it essential to spend the whole of their income on consumption goods. The higher income groups can save a part of the income. They do not require the whole of it for buying consumption goods.

It is found that when income increases the expenditure on consumption does not increase in the same ratio. When a man's income is doubled, his consumption expenditure increases but, is not doubled. The amount of increase of consumption, for a given increase of income, depends on various factors of which the habits and taste of

the person concerned are the most important. Keynes calls these factors, "the propensity to consume."

The propensity to consume can be expressed as a fraction of the income. Suppose that a man's income is Rs. 400 and that he spends Rs. 300 on consumption. Then $\text{Rs. } 300 \div \text{Rs. } 400$ or $3/4$ measures his *average propensity to consume*. Suppose now that his income increases by Rs. 10 and as a result, his consumption increases by Rs. 8. Then $\text{Rs. } 8 \div \text{Rs. } 10$ or $4/5$ is his *marginal propensity to consume*. According to Keynes, the marginal propensity to consume is less than unity. If a man's income increases by Rs. 10 his consumption expenditure will increase, but by an amount less than Rs. 10. Sudden changes in the propensity to consume do not usually occur (at least in the short period).

FACTORS DETERMINING CONSUMPTION

Because people live in organised societies, the consumption patterns of individuals are interrelated.

Consumption is determined *partly by habit and partly by imitation*. A man wants goods and services with which he has become familiar by long use (*i.e.*, by habit). He also wants to imitate the habits of social groups which he considers to be superior to him. The influence of imitation is very strong because every individual tries to climb upwards in the social scale. Copying the consumption habits of social superiors is one way of satisfying this ambition. Duesenberry¹ calls this the Demonstration Effect. This principle explains why in modern times there is a constant urge towards higher expenditure.

According to Duesenberry, the marginal propensity to consume is not always less than unity. When income increases the consumer may spend the whole of the increase in an effort to "keep up with his neighbours".

[Factors on which Demand for a Commodity depend.—See pp. 91-2.]

UTILITY

Definition. Utility means, *the power to satisfy a human want*. Any commodity or service which can satisfy a human want is said to have utility. The following points are to be noted in connection with the concept of utility :

1. The term utility is used in Economics without any moral or rational significance. The consumption of a particular commodity

¹ Duesenberry, *Income, Saving and the Theory of Consumer Behaviour*.

may be harmful, illogical or immoral. Nevertheless, if it satisfies some want of somebody it is deemed to possess utility from the economic standpoint.

2. The term utility does not refer to the intrinsic quality or the physical characteristics of a commodity. The same thing may be wanted by different persons for different reasons. A cigarette may be wanted by a non-smoker for business or for presentation to friends.

3. The term utility is popularly used as equivalent to satisfaction, but not in Economics. The "amount" of satisfaction actually obtained from the consumption of a thing is a psychological entity which is incapable of measurement, because it varies according to time, place and the mental make-up of the individual concerned.

4. The intensity of a person's desire for a commodity depends on his habits, taste and various other circumstances. At different times, the intensity of desire may be different.

5. Even when the habits, tastes etc. of a person are constant, the intensity of desire varies with the quantity of the commodity already in his possession or already consumed by him. Thus if a man has 6 shirts he desires an additional one with less intensity than he would have if he had only 2 shirts.

To avoid confusion between utility and satisfaction, some writers recommend the use of other terms in place of 'utility'. Wicksteed² suggested the term "significance".

✓ **How can Utility be Created?** Utility can be created in four different ways viz.—

(1) By changing the Form of matter. Mud usually has no utility but if it is converted to a pot, it acquires utility.

(2) By transferring matter to a Place where it would be more useful. Coal at the bottom of the earth is of no use but when it is brought to a house or factory it can be utilised for the satisfaction of wants.

(3) By holding matter over to a Time when, it would be more useful. During the rainy season there is plenty of useless water ; if it is stored and used later it is more useful.

(4) By performing a Service. Personal services like those of doctors or engineers can satisfy human wants.

These four types of utility are called : Form, Place, Time, and Service utilities.

✓ **Can Utility be Measured?** Utility or the power to satisfy a want is a psychological concept. There are two views on the question whether it can be measured. Pareto, Hicks and others are of opinion that utility cannot be measured in quantitative terms. According to

² Wicksteed, *The Commonsense of Political Economy*.

them utility, or the want-satisfying power, of a commodity does not depend on the commodity itself but on the mental attitude of the man who desires to consume it. It is a subjective concept. The mental attitude on which utility depends differs from man to man. For the same man it differs from time to time. Even at a particular point of time it is impossible to calculate, in physical terms, how much utility a man derives from the consumption of, say three cups of tea. All that a man can say definitely is whether he prefers three cups of tea to, say, two cups of coffee. Pareto and others have built up a theory of consumer demand based on these preferences.

Other writers are of opinion that it is possible to measure utility indirectly by finding out how much a man is prepared to sacrifice in order to get one unit of a certain thing. Thus, suppose that a man is willing to pay 25 P. for a cup of tea. We can then infer that the utility of a cup of tea to him has the same value as 25 P. Therefore, utility can be measured by money.

Economists, who believe that utility is a measurable magnitude, are known as the Cardinalists. Economists having the opposite view are known as the Ordinalists. (See p. 88).

Diagrammatic Representation of Utility. If we assume that utility is a measurable magnitude, we can represent it graphically as follows :

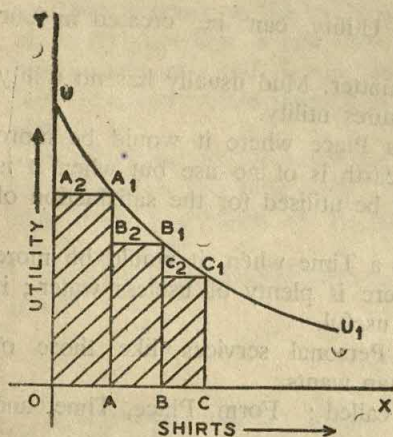


FIG. 2

The total utility from three shirts is $OAA_1A_2 + ABB_1B_2 + BCC_1C_2$. The marginal utility (when three shirts are consumed) is the utility from the third shirt, i.e., BCC_1C_2 . The points A_1 , B_1 and C_1 can be joined and extended in both directions to show the utilities derived from dif-

Let OX and OY be two axes of co-ordinates, representing shirts and the utility derived from them respectively. Suppose that OA, AB and BC represents one shirt each. The utility derived from the first shirt (OA_1) can be represented by the rectangle OAA_1A_2 , that from the second shirt (AB) by ABB_1B_2 and that from the third shirt (BC) by BCC_1C_2 . The area of these rectangles gradually diminish. (This follows from the well-known fact that as more and more of a commodity is consumed, we derive less and less satisfaction from the added units).

ferent units of shirts. The line so constructed is a downward sloping curve, which is called the Utility Curve (UU_1 in the figure).

If the point A is placed very near to O, the rectangle OAA_1A_2 will be very nearly equal to the area OAA_1U . If the first unit of the commodity is represented, not by a finite distance like OA, but by a point on OX adjacent to O the two areas will coincide.

If every point on OX represents one unit of a commodity then the utilities obtained from each unit will be represented by the vertical lines AA_1 , BB_1 , CC_1 , etc. The sum of these vertical lines will be equal to the total utility obtained. But the sum of such vertical lines from O to C is equal to the area OCC_1U . Mathematically therefore the total utility obtained from the consumption of OC units of a commodity is measured by the area OCC_1U . The marginal utility, when OC units are consumed, is CC_1 .

The length of the lines AA_1 , BB_1 etc. shows the amount of utility obtained from each unit consumed. We can measure such utility by any physical unit, suitably defined. According to the cardinal view of utility we can use money for the purpose. But if we do so, we have to assume that the marginal utility of money is constant. For, we cannot use a variable quantity as the unit of measuring anything.

✓ DISTINCTION BETWEEN TOTAL UTILITY AND MARGINAL UTILITY

Total utility is the sum of the utilities obtained from each unit consumed. Marginal utility is the additional utility which a person derives from a small addition to his stock of the commodity in question.

Suppose that a man has three shirts and suppose that x_1 represents the utility of the first shirt, x_2 that of the second shirt and x_3 that of the third shirt. Then $x_1 + x_2 + x_3$ represents the total utility obtained by him from 3 shirts. x_3 is the marginal utility at this stage. x_2 is less than x_1 , x_3 is less than x_2 .

Total utility increases up to the point of satiety (the point where marginal utility is zero and the utility curve cuts the X-axis). But marginal utility diminishes continuously. Total utility measures the desiredness of the whole supply. Marginal utility measures the desiredness of a little more of it.

The paradox of value. The distinction between Total Utility and Marginal Utility enables us to solve one paradox of value—why water is less valuable than (say) diamonds. The total utility of water is infinite but as the available supply is large the marginal utility is negligible—the Utility Curve is almost touching the X-axis. (See Fig. 3, p. 89). The total utility of diamonds is small in comparison with water but as the available supply is small the marginal utility is large. The utility

of a single diamond is appreciably larger than that of a glass of water. Therefore diamonds have a price in the market, water has almost none.

CRITICISMS OF THE UTILITY CONCEPT

The concept of "utility", as used by Marshall and his followers, has been criticised on the following grounds.

1. *It lacks definiteness.* The term "utility" is used sometimes to mean 'satisfaction'. The term 'total utility' is frequently confused with total satisfaction. But utility and satisfaction are different things. The price paid for a commodity may indicate the intensity of desire for it but does not measure the actual satisfaction obtained.

2. *It is impossible to measure it.* Utility is not a magnitude which can be measured in quantitative terms. If we use money to measure it we must assume that the marginal utility of money is constant. But this assumption is improper because every purchase reduces a man's stock of money (if income is fixed) and must increase its marginal utility to him.

The concept of measurable utility has been abandoned by some modern writers on economic theory. Pareto, Hicks³ and others have formulated a theory of consumer demand on the basis of consumer preference. This is known as the Preference Approach.

Neumann and Morgenstern⁴ found out a method of measuring utility under certain conditions. This is based on "expected" utilities which determine choices when there are "risks". The authors, mentioned above, called it a "Games Theory". The theory, and the method used, is a revival of the Marshallian cardinal utility theory. According to some modern economists, Games theory is the best explanation of behaviour of consumers and the selling policy of oligopolists.

THE LAW OF DIMINISHING UTILITY

The Law of Diminishing Utility is a generalisation drawn from the characteristics of human wants. The want of a human being for a particular commodity diminishes as its consumption increases. The want of a thirsty man for water may be intense but, after he takes one glass, his intensity of desire for another glass becomes less. Subject to certain limitations, the principle applies to all commodities and services.

The Law of Diminishing Utility can be stated as follows :

"The additional benefit which a person derives from a given increase of his stock of a thing diminishes with every increase in the stock that he already has."—Marshall.

³ Hicks (1934), *Value and Capital*.

⁴ Neumann and Morgenstern (1944), *Theory of Games and Economic Behaviour*.

"As a consumer increases the consumption of any one commodity keeping constant the consumption of all other commodities the marginal utility of the variable commodity must eventually decline."—Boulding⁵.

Reasons why marginal utility declines. There are several reasons why marginal utility declines with increasing consumption :

1. Commodities are *imperfect substitutes* of one another. Commodities must be consumed in certain appropriate proportions, e.g., X of bread with Y of butter. If X is fixed, increasing consumption of Y will sooner or later yield diminishing utility.

2. 'The desire for a particular commodity or service can usually be satisfied in full (*i.e.*, it is *satiabile*). We cannot consume an infinite quantity of a commodity or service. The first few units consumed gives a positive marginal utility. As consumption increases, a time comes when no further utility is obtained. At this stage marginal utility is zero. Between this stage and the stage of a positive marginal utility there must have been a downward variation of marginal utility.

3. Some economists hold that the method of marginal utility analysis can be explained by the *introspective method*. The laws regarding marginal utility can be found out by intuition. A normal person can reconstruct his mind by observation. It is clear that if a person eats one orange he feels less eager for the second orange. This method of analysis is called 'introspection'.

It is only the marginal utility which diminishes. The total utility increases, but at a diminishing rate, up to the point of satiety.

Diagrammatic Representation. The Law of Diminishing Utility can be diagrammatically represented as follows (Fig. 3):

Suppose that each point on OX represents a certain quantity of a commodity and that the vertical line standing on it represents the corresponding marginal utility. That is, let AA_1 represent the marginal utility of OA units of the commodity, BB_1 the marginal utility of OB units and so on.

The Law of Diminishing Utility states that the vertical lines AA_1 , BB_1 , CC_1 etc. will gradually become shorter and shorter. If we join A_1 , B_1 , C_1 , etc., the line will slope downwards from left to right. This line (UU_1 in the Figure) is called the Utility Curve of the commodity. The curve may conceivably cut OX at some point. At that

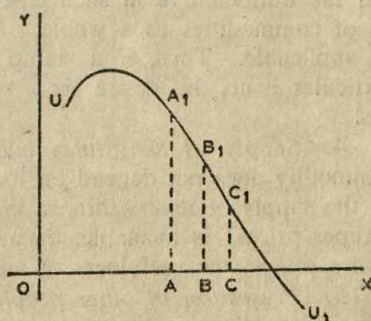


FIG. 3

point, the marginal utility is zero. The consumer reaches satiety at this point and does not want to consume any more units of the commodity. If further increments of the commodity are added, the consumer will suffer pain or disutility. When this occurs, the utility curve is below the X-axis, showing negative utility.

Limitations of the Law. Like other economic laws, the law of Diminishing Utility is subject to certain limitations. These are as follows :

1. *Constant income and taste.* The law is true only if "other things remain the same", i.e., if the *habits, tastes, temperament and the income* of the consumer remain the same. If any of these items change, the utility curve will have to be redrawn. But at any given level of taste and income the law must apply and the utility curve must have a downward slope.

2. *Initial stages and small increments.* The law may not apply, in the initial stages, for very small increments of the commodity. If a thirsty man is offered water in teaspoons the utility he gets from the second teaspoon of water may conceivably be greater than that from the first one. This is shown in the diagram by the upward slope of UU_1 in its earlier part.

3. *Wants of collectors.* There are certain commodities whose utility to the possessor increases more than in proportion to the quantity. The collector of curios or stamps may desire additional units with greater intensity. These are, however, rare cases. Viner suggests that the utility curve in such cases should be drawn for a group or set of commodities as a whole. If this is done, the general law will be applicable. Thus, if a stamp collector has a complete set of a particular issue, his desire for a second set of the *same issues* will be less.

4. *Supply of substitutes and complements.* The utility of a commodity does not depend on its own supply only. It also depends on the supply of its *substitutes and complements*. If more coffee (at cheaper prices) is available, the utility of tea may fall. If petrol becomes scarce, the usefulness of automobiles will sharply decline.

5. *Possession of other people.* Pigou points out that the utility of a commodity sometimes depends on the amount of the commodity which other people possess. For example, if in a rich locality every householder except one, has two cars, the person with one car will be very unhappy. The intensity of his desire for a second car will probably be higher than that for the first car.

6. *Desire from impulse and imitation.* The desire for a commodity sometimes springs from impulse or imitation. In such cases the law of diminishing utility may not apply.

DEMAND

Definition of Demand. Demand may be defined as desire backed by adequate purchasing power. Mere desire or wish cannot bring goods. It is only when the demander offers some consideration for getting a thing that "effective demand" arises. Demand therefore is related to price. In Economics, the term Demand is always used to signify *how much* of a commodity is purchased at a *given price*.

Demand must be related to a time period, *i.e.*, it must be expressed per unit of time. For example, it is meaningless to say that "at Rs. 4 per kg. the demand for sugar in Calcutta is 1 lakh quintal". We must specify whether the amount is demanded per day, week or month. Benham therefore says, "the demand for anything, at a given price, is the amount of it which will be bought per unit of time at that price".

Factors on which Demand for a Commodity depends. There are four fundamental factors which determine the quantity of a commodity that is purchased by a consumer. They are as follows.⁶

1. *The price of the commodity.* Payment of price, or any other consideration, involves a sacrifice. No reasonable man will sacrifice for a commodity more than what it is worth to him in terms of utility. Suppose that a man derives an utility worth Rs. 40 from a shirt. If the market price of shirts is more than Rs. 40 each, he will not purchase any. If the price is Rs. 40, he may purchase one. From a second shirt his utility will be less than Rs. 40. Suppose that it is Rs. 30. He will never purchase two shirts of Rs. 40 each. But he may purchase two shirts if the price falls to Rs. 30. Thus, at any *particular price* there is a *definite quantity* of the commodity which the consumer will purchase. The amount of such purchase is determined by the *utility received* in comparison with the *sacrifice involved*. When the price falls, the sacrifice becomes less and more will be purchased. When the price rises the sacrifice increases and less will be purchased. This is known as the Law of Demand.

2. *The income of the consumer.* The ability to buy a commodity or service depends on the income of the consumer. The higher the income, the lower is the marginal utility of money. A rich man can afford to pay more for what he buys. His individual demand schedule (see below) is at a higher level, in money terms, than that of a poor man.

When the income of a man increases, his ability to pay increases. He usually buys, in larger quantities, the goods and services he used to buy formerly. Thus if he was in the habit of seeing one cinema film a week he may, when his income increases, see two or more films per week. To this rule there are certain exceptions. He may buy

⁶ Stigler, *Theory of Price*, Ch. 6.

less of certain goods and services when his income *increases*. For example, a man may buy less vegetable oils and use more *ghee* in their place. Goods which are purchased *less*, when income *increases*, are called Inferior Goods.

Reduction of income has the opposite effects. Less goods and services will ordinarily be purchased. But the *purchase of inferior goods may increase*.

Thus change of income changes the consumption pattern of an individual. At a particular level of income, the consumer buys goods and services of certain kinds in certain quantities. When his income changes, he buys different quantities of those goods and services and substitutes some of them by other goods and services. How he will distribute his income, among the different goods and services, depends on their *relative prices* and *his taste and preferences*.

3. *The prices of Substitutes and Complements.* The demand for a commodity changes in the same direction as the price of its substitutes. If the price of coffee falls, the demand for tea will fall. The demand for a commodity changes in the opposite direction to the price of its complements. If the prices of typewriters fall, the demand for typewriter ribbons will rise.

4. *The taste and preferences of the consumer.* This is the most important factor. How much of a commodity a man buys depends on how intensely he desires it. This will also determine how he distributes his income among his different purchases. A change of taste and preferences will change the demand schedule.

Demand Schedules. At different prices, the consumer buys different quantities of an article. A list, showing the quantities that will be purchased by a consumer at different prices, is called his *Individual Demand Schedule*. An example is given below.

Individual Demand Schedule

Price	Amount Demanded
Rs. 40	1
Rs. 30	2
Rs. 20	4
Rs. 10	6

By adding up the Demand Schedules of all individuals in a market we can draw up a list of the different quantities which will be purchased in the market at different prices. Such a list is called the *Market Demand Schedule*. An example is given below.

Market Demand Schedule

Price	Amount Demanded
Rs. 10	8,000 units
Rs. 8	10,000 "
Rs. 6	15,000 "
Rs. 4	20,000 "

In actual life it is almost impossible to construct a market demand schedule. All that we can say is that the quantity sold will increase when the price falls and decrease when the price rises.

Demand Curve. If the market demand schedule is plotted on a graph we get a downward sloping curve, showing that as the price becomes lower the quantity purchased becomes larger.

The curve is called the Demand Curve and corresponds to the Utility Curve of the commodity. (See Fig. 4).

The demand curve is usually drawn as a continuous line. This assumes that there is a price for every unit of the commodity, however small, and that the market responds to infinitesimally small changes in the price or quantity. These assumptions are not always true.

Attempts have been made by statisticians to find out the demand curves of various commodities.⁷

Causes and Effects of Change of Demand. See Ch. 13.

✓ THE LAW OF DEMAND

The Law of Demand states that when the price of a commodity *rises*, there occurs a *fall* in the amount purchased. Conversely, when the price of a commodity *falls*, the amount purchased *increases*. From the Law of Demand it follows that the Demand Curve, which shows how much of a commodity is purchased in the market at different prices, is a curve sloping downwards from left to right.

The demand curve may, under certain circumstance, rise upwards. (See below, under, "Exceptions to the Law of Demand".)

In Fig. 4, DD_1 is the Demand Curve of a commodity. The downward slope indicates that when price rises, less is demanded and when price falls, more is demanded.

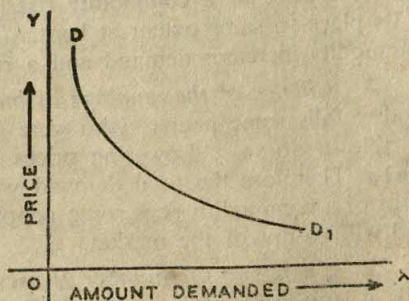


FIG. 4

⁷ Klein, *An Introduction to Econometrics*, Ch. 2.

✓ **Reasons Underlying the Law of Demand.** The inverse variation between price and demand can be explained by the following reasons :

1. *The Law of Diminishing Utility.* The purchase of a commodity involves a sacrifice. The sacrifice is measured by the price paid. The consumer will never pay for a commodity more than the money value of its marginal utility to him. But the larger the amount of a commodity purchased, the less is the marginal utility. Therefore, the consumer will not buy a large quantity unless the price is low. This follows from the Law of Diminishing Utility. Suppose that a man derives utility worth 50 P. from the first orange consumed and 30 P. from the second. If the price of orange is 50 P. each, he will buy only one. If the price is 30 P., he will buy two. When price falls, the consumer increases his purchases for thereby he increases his total utility. When price rises, the consumer must reduce his purchases by cutting out those units of the commodity which yield to him less utility than the price.

2. *The Income Effect.* The fall in the price of a commodity is equivalent to an increase in the income of the consumer because now he has to spend less for purchasing the same quantity as before. A part of the money, so gained, can be used for purchasing some more units of the commodity. Therefore, when price falls the amount purchased increases. When price rises, the consumer's income is in effect reduced and he has to curtail his expenditure on the commodity. So the amount purchased falls.

3. *The Substitution Effect.* When the price of a commodity falls it will be substituted for costlier things because thereby the consumer will gain. If the price of coffee falls it will be used by some people in place of other beverages to some extent. Conversely, when the price of a commodity rises, other commodities will be used in its place to some extent at least. Therefore a fall in the price of a commodity increases demand and a rise in its price reduces demand.

4. *Change of the numbers of buyers.* When the price of a commodity falls some people, who were formerly unable to buy it, would be able to do so. "Lowering prices brings in new buyers." (Samuelson). Therefore the total demand will rise. Conversely, when the price of a commodity rises some people will find it impossible to buy it and will go out of the market.

5. *Change of the number of uses.* When the price of a commodity falls it is used for various uses. For example, when the price of mango falls it is used not only for more consumption and also for preparing chutney. Similarly when price rises, the uses of the commodity are restricted.

Assumptions of the Law of Demand. The Law of Demand is based upon the following assumptions :

1. *The habits and tastes of the demanders remain unchanged.* The amount of a commodity which a person consumes depends on his taste and habits. If they change, the amount consumed will also change. When a commodity becomes fashionable its consumption will increase, irrespective of price changes. The demand curve is drawn on the basis of a particular level of habits and taste. When taste and habits change, the demand curve has to be redrawn. But at the new level, the curve will have a downward slope.

2. *The income remains the same.* When income changes the consumer's scale of choices usually becomes entirely different. He may purchase more of a commodity at the same price. On the other hand, if the commodity concerned is an inferior good, he may replace it by a better variety. Hence his demand curve has to be redrawn, when his income is changed.

3. *The prices of other goods remain the same.* A change in the prices of substitutes and complementary goods may cause demand to shift. The demand for tea will be affected if the price of coffee falls or if sugar is scarce.

Exceptions to the Law of Demand. The Law of Demand does not hold good in the following cases :

1. *Conspicuous consumption.* There are some goods (like women's hats) which are purchased, not for their intrinsic worth, but for their "snob-appeal". They are cases of what Veblen called "conspicuous consumption" or *articles of ostentation*. When prices of such goods rise their use becomes more attractive and they are purchased in larger quantities. If fish becomes more costly, some people will buy more of it just to show that they are rich enough to afford it. On the other hand, when such goods become cheaper, they are purchased less.

2. *Speculative markets.* In the *speculative markets* a rise of prices is frequently followed by larger purchases and a fall of prices by less purchases. When the price of a share rises, people expect further rise and rush to buy. When price falls, they wait for a further fall and stop buying. The same thing may happen in the case of other commodities when purchases are made on a speculative basis. But it is a short period phenomenon.

3. **The Giffen Effect and Giffen Goods.** Giffen found that in 19th century Ireland the people were so poor that they spent the major part of their income on potatoes and a small part on meat. Potato was cheap but meat had higher prices. When the price of potatoes rose, they had to economise on meat. To fill up the resulting gap in food-supply more potatoes had to be purchased. Thus rise in the price of potatoes led to increased sales of potatoes. This is known as the Giffen

Effect. This effect is usually found in the case of cheap necessary foodstuffs.

Conclusion. In the cases noted above, an *increase* of price leads to *greater* demand and a *fall* of price leads to *less* demand. The demand curve in such cases slopes *upwards* from left to right. Demand curves of this type are very exceptional. Sometimes the demand curve may slope upwards for a short range and then slope downwards again.

ELASTICITY OF DEMAND

The Concept of Elasticity. From the Law of Demand we know that a change in the price of a commodity is followed by a change in the quantity demanded. But the *rate* at which demand changes is different for different commodities. The rate of change of demand depends upon various factors like the nature of the commodity and the consumption pattern of the consumers. Suppose that when the price of soap is Rs. 1.50 per cake the total demand is 10,000. If price rises to Rs. 2, demand will fall to (say) 6,000. In this case there is a large fall in demand. In the case of a commodity like rice or wheat, the fall in demand for a similar rise of price will be much less. Thus the *response* of demand to changes in price differs in different cases. The term Elasticity of Demand is used to denote *a measure of the rate at which demand changes in response to changes in price*. The terms Demand Elasticity and Price Elasticity are used in the same sense.

Measurement of Demand Elasticity. Demand Elasticity or Price Elasticity is measured by the ratio between the *proportional change in demand* and the *proportional change in price*.

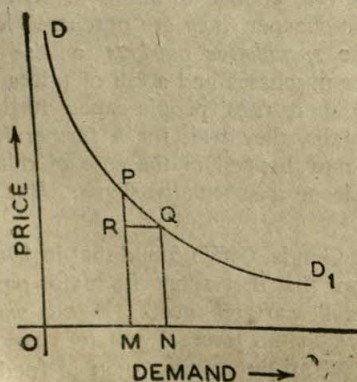


FIG. 5

In Fig. 5, DD_1 is the Demand Curve of a commodity. When price is PM , demand is OM . When price falls to QN , demand increases to ON .

Therefore, change in price = PR [$PR = PM - RM = PM - QN$]
and, change in demand = MN .

The proportional change in demand = $\frac{MN}{OM}$ [change per unit of original demand]. Similarly, the proportional change in price is $\frac{PR}{PM}$.

Therefore, Demand Elasticity,

$$= \frac{\text{proportional change in demand}}{\text{proportional change in price}} = \frac{\text{change of demand}}{\text{original demand}} \div \frac{\text{change of price}}{\text{original price}}$$

$$= \frac{MN}{OM} \div \frac{PR}{PM} = \frac{MN}{OM} \times \frac{PM}{PR}$$

Suppose that original price (PM)=p; change of price (PR)= Δp ; original demand (OM)=q; and change of demand (MN)= Δq . Then,

$$\text{Demand Elasticity} = \frac{\Delta q}{q} \div \frac{-\Delta p}{p}$$

[Since price has moved in the downward direction we must put a negative sign before Δp .]

$$= -\frac{\Delta q}{\Delta p} \times \frac{p}{q}$$

We can measure Demand Elasticity by this formula if we know the values of p, q, Δp and Δq .

Suppose that when the price of a commodity is Rs. 5, the quantity sold is 100 and when price falls to Rs. 3, the quantity sold increases to 150. Then $p=5$; $\Delta p=2$ (Rs. 5—Rs. 3); $q=100$; $\Delta q=(150-100)=50$.

$$\therefore E_d = -\frac{\Delta q}{\Delta p} \times \frac{p}{q} = -\frac{50}{2} \times \frac{5}{100} = -1.25$$

The absolute magnitude of the demand elasticity in this case is 1.25. The absolute magnitude of the demand elasticity is also called the Coefficient of Elasticity of demand.

Elastic Demand and Inelastic Demand. When the Coefficient of Elasticity of demand (as found by the above method) is more than one, demand is said to be Elastic. If it is less than one, demand is Inelastic. If it is equal to one, demand is said to have Unit elasticity. When demand is elastic, a small fall in price causes a *large* increase of demand. When demand is inelastic, a small fall in price causes a *small* increase of demand. In case of unit elasticity the proportional change in demand is equal to the proportional change in price.

The Total Outlay Method. Elasticity of Demand can also be defined in terms of the total outlay on the commodity. Let us imagine

a commodity whose demand changes exactly in proportion to the changes in price. For example, suppose that there is a commodity with the following demand schedule :

Price	Amount Purchased	Total Outlay
Re. 1	1200	Rs. 1200
Rs. 2	600	"
Rs. 3	400	"
Rs. 4	300	"
Rs. 6	200	"

In this case we find that the *total outlay* of the consumers on the commodity remains the same, whatever the price may be. The elasticity of demand for such a commodity is said to be Unity. If, when price falls, the total outlay on a commodity increases, the demand for it is called Elastic; if, when price falls, the total outlay is reduced, the demand for it is called Inelastic.

Arc Elasticity and Point Elasticity. When elasticity is measured over a definite range of the demand curve, it is called the Arc Elasticity of Demand. In Fig. 5 price is supposed to have changed from P to Q, i.e., along the arc PQ of the demand curve. The numerical value of E_a obtained by considering the change from P to Q is supposed to apply over the range PQ and is called the Arc Elasticity of Demand. This result is obtained whenever the price change is not a small quantity. [In the numerical example given above under "Measurement of elasticity", the result is, strictly speaking, the value of arc elasticity.]

If, however, we assume that the change of price is infinitesimally small, the elasticity calculation will relate to a particular point of the demand curve (and not over a *range* of it). The value of E_a obtained on this basis is called the Point Elasticity of Demand.

The formula for Point Elasticity is,

$$E_a = - \frac{dq}{dp} \times \frac{p}{q} \text{ where } \frac{dq}{dp} \text{ is the first differential of the equation}$$

for the demand curve or the demand function $q=f(p)$.

The definition of Point Elasticity of demand has been defined in the last para. The term Arc Elasticity may be called Percentage Elasticity.

Geometrical Representation of Point Elasticity. Marshall devised a diagrammatic method of representing elasticity of demand at any point on the demand curve. This can be shown as follows :

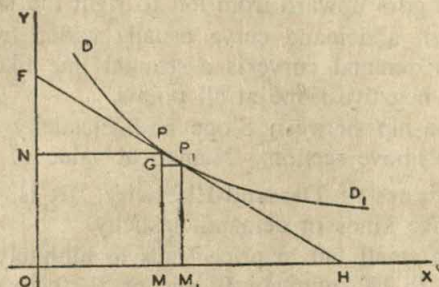


FIG. 6

Let P and P_1 be two points so close together on the demand curve (DD_1) that PP_1 is a straight line. Obviously in this case the change of price and of demand are very small quantities. PP_1 can be taken to be the tangent to the demand curve at P. At point P, elasticity of demand = $\frac{\text{proportional change in quantity}}{\text{proportional change in price}}$

$$= \frac{MM_1}{OM} \div \frac{PG}{FM} = \frac{MM_1}{PG} \times \frac{FM}{OM} = \frac{P_1G}{PG} \times \frac{FM}{OM}$$

(because $MM_1 = P_1G$)

$$= \frac{MH}{FM} \times \frac{FM}{OM} \quad (\text{because } PP_1G \text{ and } PHM \text{ are similar triangles})$$

$$= \frac{MH}{OM}$$

Also since PHM, FHO, and FPN are similar triangles :

$$\frac{MH}{OM} = \frac{PH}{PF} = \frac{ON}{NF}$$

Numerical value of the elasticity. Thus, to find the elasticity at any point P on the demand curve, draw the tangent to the demand curve at that point. Any one of the above ratios will give the numerical value of the elasticity.

Slope of the Demand Curve. The slope of a curve is a geometrical concept. The slope of a curve is its steepness. It is measured by finding out the tangent to the curve at a point of it. In Fig. 6, at point P,

$$\text{Slope} = \text{tangent of angle FHO} = \frac{PM}{MH} = \frac{FO}{OH}$$

When a curve goes downward from left to right (as it is usually in the demand curve) the slope is negative. The reason is that in a demand curve when price increases quantity diminishes. In cases where the curve goes upward from left to right the slope is positive.

The slope of a demand curve usually varies from one point to another. If the demand curve is a straight line like DD_1 in Fig. 8, it has the same negative slope at all points.

The relationship between Slope and Elasticity of Demand—See last para of the above section, “Numerical value of elasticity”.

✓ **Different Types of Demand-Elasticity.** It is possible to distinguish between five kinds of demand-elasticity.

1. When a small fall in price leads to infinitely large purchases, demand is said to be Infinitely Elastic or Perfectly Elastic ($E = \infty$). The demand curve in this case is a straight line parallel to the X-axis (DD_1 in Fig. 7).

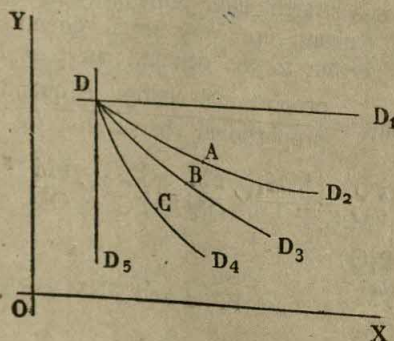


FIG. 7

2. When a small fall in price leads to a large but a finite increase of purchases, demand is called Elastic ($E < \infty$ and > 1). The demand curve has a smooth slope (DD_2 in Fig. 7). On DD_2 at A, $E > 1$.

3. When a change of price causes an exactly proportional change of demand, the elasticity of demand is Unity ($E = 1$). On DD_3 in Fig. 7, $E = 1$ at point B.

4. When a fall of price reduces total outlay but not to zero, demand is Inelastic ($E < 1$ and > 0). The demand curve in this case has a steep slope. (DD_4 in Fig. 7). On DD_4 at C, $E < 1$.

5. When a change of price causes no change in the amount purchased, demand is said to be Infinitely Inelastic or Perfectly Inelastic ($E = 0$). The demand curve in this case is a straight line perpendicular to the X-axis. (DD_5 in Fig. 7).

In real life we meet only with cases 2, 3 and 4.

A Straight Line Demand Curve. Suppose that the demand curve is a straight line like DD_1 in Fig. 8. In this case the tangent to any point on the demand curve will coincide with the demand curve. Hence it is easy to calculate the Point Elasticity of Demand. Thus at A, demand

elasticity = $\frac{D_1A}{AD}$. It is elastic

because $D_1A > AD$. At B, elasticity is unity if $D_1B = BD$. At C, demand is inelastic because $D_1C < CD$.

E_d is not the same at all points of a straight line demand curve. This is also true for demand curves of any shape.

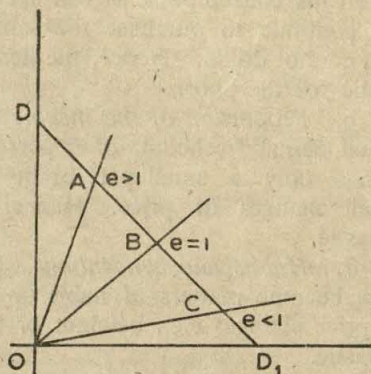


FIG. 8

Factors Determining Demand-Elasticity. The numerical value of demand-elasticity depends on the shape of the demand curve at the point under consideration. Elasticity of demand, for any commodity, is therefore, determined by all the economic and non-economic factors on which the shape of the demand curve depends. The following is a list of the major factors :

1. *The nature of the commodity.* The demand for necessities is generally inelastic because the consumption of a necessary article (e.g., salt) does not change much for changes in prices. The demand for luxuries e.g., a silk sari, changes much, when prices change, and is therefore elastic.

2. *Extent of use.* A commodity having a variety of uses has an elastic demand. For example steel can be used for many purposes. A slight fall in its price will bring forth demand from many quarters and hence its demand is elastic. A commodity having a small limited use has an inelastic demand.

3. *The range of substitutes.* The consumption of a commodity having good substitutes can be quickly curtailed if price rises. For example, if price of tea rises, people will use coffee. The demand for such commodities is therefore elastic. A commodity without good substitutes has an inelastic demand.

4. *Durability.* The purchase of a durable commodity can be spread over a period of time. Price changes therefore have a smaller effect and demand is inelastic. When it is possible to postpone the consumption of a commodity for some time, demand tends to be inelastic.

5. *Income level.* People with high incomes are less affected by price changes than people with low incomes. A rich man will not curtail his consumption of fish even if its price rises considerably. He will continue to purchase the same quantity as before. But a poor man cannot do so. Hence, the demand for fish is inelastic for the rich, elastic for the poor.

6. *Proportion of the income spent on the commodity.* The individual demand schedule of a person for a commodity on which he spends only a small part of his income does not change much for small changes of price. Hence, demand for such a commodity is inelastic.

7. *Habits and conventions.* Consumption of commodities, which have become matters of habit or convention, is not influenced much by price changes e.g., betelnut or tobacco. Their demand is therefore inelastic.

8. *The level of prices.* When prices are already high further rise quickly curtails consumption. When prices are low small changes have less effect. Therefore demand is elastic at the upper levels of prices, inelastic at the lower levels. [See Fig. 8.]

Demand-Elasticity through Time. Demand-elasticity may change through time even if all the other factors (habits, taste etc.) remain unchanged.

In the case of some commodities, the short run elasticity is larger than the long run elasticity. For example a fall in the price of machinery may attract many new buyers and lead to large sales. But subsequently these buyers will need the same type of machinery for replacements only and will spread their purchases over a period of time. Sales in later years will be less than the sales in the initial period.

In the majority of cases however the long run elasticity is larger than the short elasticity. Stigler⁸ mentions three possible reasons for this phenomenon.

1. *Technological reasons:* Sales will not respond to fall of price if complementary commodities are not available. For example, a fall in the price of electricity will lead to much increase of consumption only after the necessary new appliances are available. As regards durable goods, fall of price will increase sales only after the existing goods have been worn out.

2. *Imperfect Knowledge:* Fall of price will produce its full effect only when all customers (actual and potential) are aware of the fact. This takes time.

3. *Necessity for Readjustment:* Increased purchase of a commodity involves rearrangement of budget by including larger purchases of complementary commodities etc. It takes time to change the con-

⁸ Stigler, *Theory of Price*, p. 93.

sumption pattern. Elasticity of demand therefore, changes through time.

The Elasticity of Demand for a Factor of Production. The demand for a factor of production is derived from the demand of the final products, because factors are required for producing goods. Therefore the elasticity of demand for a factor varies directly to that of final products. This rule is subject to the following exceptions⁹ :

(i) If the cost of a factor is a small part of the total cost of the product, the demand for the factor is *inelastic*.

(ii) If a factor is easily substitutable by another factor the demand for each factor is *elastic*.

Utility of the Concept of Elasticity. The concept of elasticity is a highly useful tool of economic analysis. Some examples are given below.

1. In the *theory of value* it enables us to determine the conditions of equilibrium. At equilibrium marginal revenue is equal to marginal cost. The value of the former depends on elasticity of demand. $[MR = P \left(1 - \frac{1}{e}\right)]$. See Ch. 11.]

2. In the *theory of taxation*, certain rules of policy can be formulated on the basis of the elasticity of demand of the taxed commodity. Taxes generally raise prices. If the demand for a commodity is elastic, the rise of prices following taxation will quickly curtail consumption and the yield of the tax will be small. On the other hand, the consumption of a commodity with inelastic demand (like salt) cannot be curtailed much and a tax on it will yield more. Hence, before imposing a tax, the Government ought to consider the elasticity of demand of the commodity concerned.

3. *Economic policy* : Knowledge of elasticity is important for the appraisal of economic policies. Some examples are given below.

(a) *The price policy of agricultural products.* The demand for most agricultural products is inelastic. Therefore, if the government keeps a part of the crop off the market, or reduce the quantity of the total product, the cultivators will get a higher gross income. But lowering of the prices of agricultural products will not produce higher income for the cultivators.

(b) *The export policy.* Economic policies directed to increasing export must also take into account the elasticity of demand. A country can expand the physical volume of its exports by lowering their prices, e.g., by devaluation of the currency. But if the demand for its exports are inelastic the money receipts from the exports become smaller.

(c) *The railway rate policy.* If the demand for freight and passenger fare are inelastic, the railway can get higher revenue by raising the rates. Conversely if it is inelastic, lowering railway rate will produce a smaller revenue.

4. *Business pricing decisions :* The execution of pricing decision must be based upon the elasticity of demand of the commodity. If the demand is inelastic a higher price may yield higher profits and lowering the price may lead to lower profit.

5. *Monopoly price decisions :* The monopolist in fixing the prices of his goods has to take elasticity of demand into account. He can raise price without affecting sales much if the demand is inelastic. But if the demand is elastic, a comparatively low price will lead to large sales and large profit.

INCOME-ELASTICITY

Change of income leads to change of demand. The proportion by which the demand for a commodity changes due to a small change of income is called the Income-Elasticity. Income Elasticity of Demand E_i

$$= \frac{\text{Proportional change in purchase of good X}}{\text{Proportion Change of Income}}$$

Let Y = an initial income ; ΔY = a small change in income ; q = initial quantity purchased ; Δq = change in quantity purchased as a result of a change in income. Then,

$$E_i = \frac{\frac{\Delta q}{q}}{\frac{\Delta Y}{Y}} = \frac{\Delta q}{q} \times \frac{Y}{\Delta Y}$$

$$= \frac{\Delta q}{\Delta Y} \times \frac{Y}{q} = \frac{\text{Income} \times \text{Change of Quantity}}{\text{Quantity} \times \text{Change of Income}}$$

Example : A person's income rises from Rs. 100 to Rs. 102 and his purchase of a commodity increases from 25 units per week to 30 units. His income elasticity of demand for a commodity is,

$$E_i = \frac{\frac{5}{25}}{\frac{2}{100}} = \frac{1}{5} \times 50 = 10$$

It is possible to express income elasticity in terms of changes in expenditure. Then,

$$E_i = \frac{\text{Income} \times \text{change in expenditure}}{\text{Expenditure} \times \text{change in income}}$$

E_i is usually positive *i.e.*, increase of income generally increases demand. But in case of inferior goods E_i is negative. E_i is greater than 1 in case of luxury articles and less than 1 in case of necessities.

✓CROSS-ELASTICITY OF DEMAND

Cross-Elasticity shows the relationship between the demands for two different commodities. When the quantity of a commodity sold in the market increases, the demand for its substitutes will fall and the demand for its complements will increase. Therefore the price of the substitutes will fall and the price of the complements will increase. Cross-Elasticity measures the change of prices of such commodities in relation to the change of demand of the other commodity. Thus

$$\text{Cross-Elasticity} = \frac{\text{proportional change in demand of X}}{\text{proportional change in price of Y}}$$

where X and Y are two different commodities.

The classes of different types Cross-Elasticity can be enumerated as follows :

1. $E_c = 0$. In this case a change in price of X has no effect on demand of Y. X and Y are unrelated goods, *e.g.*, wheat and wool.
2. E_c is positive. In this case a change in price of X causes a direct change in quantity Y. X and Y are substitutes, *e.g.*, tea and coffee.
3. E_c is negative. In this case the price of X brings an inverse change in the quantity of Y. X and Y are complementary goods, *e.g.*, motor car and petrol.

THE PRINCIPLE OF SUBSTITUTION

The Reason. The principle of substitution is a generalisation drawn from common sense. Suppose that a cultivator has a stock of rice, the utility of one unit of which is 5, and suppose that one unit of rice exchanges in the market for a certain quantity of wheat which gives him 7 units of utility. It is clearly to his advantage to exchange his rice for wheat. He gains 2 units of utility by the transaction. In this case wheat has been substituted for rice. As a general rule, a consumer substitutes a low-utility commodity by a high-utility commodity, whenever possible. A producer also follows the same principle. Whenever possible, he replaces an expensive factor of production by a less expensive one. *The replacement of a low-utility commodity by a high-utility commodity or a high cost factor by a low cost factor is known as Substitution.*

Advantages. By substitution, the consumer increases his total utility and the producer increases his profit. Every reasonable individual tries to increase his gains. Substitution is a method of doing so. Hence, we can assume that the Principle of Substitution is operative throughout the field of economic activity.

THE LAW OF EQUIMARGINAL RETURNS

The law. The Principle of Substitution leads to what is called equimarginal returns. The process of substitution proceeds until there is no further scope for increase of utility or reduction of costs by replacement of one article by another. When this objective has been secured the marginal utilities obtained from each of the articles used must be the same. This is known as the *Law of Equimarginal Returns* (also called the *Law of Equimarginal Utility*). The law has been stated by Marshall as follows : "*If a person has a thing which he can put to several uses, he will distribute it between these uses in such a way that it has the same marginal utility in all.*"

Proof. The Law of Equimarginal Returns can be proved as follows. Suppose that a man has 50 rupees to spend on tea and cigarettes. He finds that if he spends an equal amount on both he will get from the 25th rupee spent on tea an utility of 40 units and from the 25th rupee spent on cigarettes an utility of 30 units. Clearly if he shifts the 25th rupee from cigarette to tea he gains in utility. He sacrifices from cigarette nearly 30 and gains from tea nearly 40. If he is a rational individual he will not spend the money half and half between the two commodities but will spend more on tea. The question is how much more? Suppose that if he spends Rs. 30 on tea and Rs. 20 on cigarettes the marginal utility is 35 in both cases. Now there is no further gain by shifting or substitution. Therefore, the money will be distributed between the two commodities in such a way as to secure equal marginal utility from both. The principle can be easily extended to expenditure over more than two commodities. Distribution of means between different uses will yield maximum utility when the marginal utility from each use is equal. Equimarginal returns thus lead to maximum satisfaction.

Application. The Law of Equimarginal Returns applies to production also. A producer will vary the quantities of the different factors of production in such a way as to get equal marginal productivity from all lines of expenditure. His cost of production will be lowest when he does so.

Generally speaking, the expenditure pattern of every individual is based on the Law of Equimarginal Returns. The Law is therefore also known as the Law of Consumer's Demand.

The Optimum Budget of the Consumer. The Law of Equi-marginal Returns can be stated in another form. Suppose that a man has A units of a commodity and the marginal utility at this stage is U. If the price of the commodity is less than U, it will be advantageous for him to purchase further units, because the gain in utility by such purchase is more than the sacrifice involved in paying the price. A person gains by pushing his purchase of a commodity up to the point at which the marginal utility is equal to the price. Then if a consumer buys several commodities A, B, etc. it follows that—
 Marginal Utility of A = Price of A $\times$ Marginal Utility of Money Income

$$\text{or } \frac{\text{Marginal Utility of A}}{\text{Price of A}} = \text{Marginal Utility of Money Income}$$

Similarly

$$\frac{\text{Marginal Utility of B}}{\text{Price of B}} = \text{Marginal Utility of Money Income}$$

Therefore, the ratio between the m.u. of commodity A and the price of A must be equal to the ratio between the m.u. of B and the price of B, for both ratios are equal to the m.u. of money income to the consumer.

The argument stated above applies to all commodities and services that a man purchases. Hence, if a man distributes his expenditure rationally among commodities A, B, C, etc. the following relationship will hold good :

$$\frac{\text{m.u. of A}}{\text{price of A}} = \frac{\text{m.u. of B}}{\text{price of B}} = \frac{\text{m.u. of C}}{\text{price of C}} = \text{etc.}$$

At equilibrium, the marginal utilities of the different commodities purchased are proportional to their prices.

Limitation of the Law of Equimarginal Returns. The principle of Substitution and the Law of Equimarginal Returns may not operate in actual life with as much accuracy as is assumed in economic theory. The following limitations of the principle may be mentioned :

- (1) Consumers and producers may make *mistakes in the allocation* of their means. Some of them will not be able to make fine calculations about marginal utilities and relative sacrifices.
- (2) The Law of Equimarginal Returns imputes *too much rationality* to human beings. It fails to take into account the fact that commodities are sometimes purchased from impulse or because it is fashionable to do so or because the consumer is ignorant of more useful alternatives.
- (3) Some commodities are *not divisible to the extent required* for the equalisation of marginal utilities. It is not possible to equalise

the marginal utility of motor cars to that of potatoes because one cannot buy a part of a motor car.

(4) Equimarginal returns do *not necessarily lead to maximum satisfaction*. By following the principle a consumer may maximise his total utility. But 'utility' is not the same thing as 'satisfaction'.

Against the above criticisms the following points are to be considered :

(1) Utility may not be identical with satisfaction but there is a close correspondence between the two. So *maximisation of utility* can be regarded as *a close approximation to maximisation of satisfaction*.

(2) Generally speaking, men try to avoid loss and increase gain. Equalisation of marginal returns through substitution is a method of *reducing loss and increasing gain*. Therefore it can be assumed that the majority of men act upon this principle, consciously or unconsciously. "We are not, of course, compelled to distribute our incomes according to the Law of Substitution or Equimarginal expenditure, as a stone thrown into the air is compelled, in a sense, to fall back to the earth; but as a matter of fact, we do in certain rough fashion, because we are reasonable".¹⁰

CONSUMERS' SURPLUS

Definition. The concept of consumer's surplus was introduced into economic theory by Marshall to show that the consumer, in an advanced economic community, generally "receives more than he pays for".

Suppose that a person derives an utility equal to 50 P. from one cup of tea, *i.e.*, he is prepared to pay 50 P. rather than go without tea. Suppose that from the second cup he gets an utility worth 30 P. and from the third cup 10 P. If the market price of tea is 10 P. a cup, he will consume 3 cups and pay 30 P. for them. But the utility that he gets is measured by $(50+30+10)$ P.=90 P. Therefore he enjoys a "surplus" utility of 90 P.- 30 P.= 60 P. This surplus is the consumers' surplus.

Consumers' surplus can be defined as the *difference between the total utility obtained from the consumption of a thing and the sacrifice involved in paying for it*. $\text{Consumers' Surplus} = \text{total utility} - \text{price} \times \text{number of units purchased}$.

Diagram. Consumers' surplus may be diagrammatically represented as follows. Let DD_1 be the demand curve of a commodity. If PM is the price, total consumption is OM and total price paid is

¹⁰ Chapman, *Outlines of Political Economy*.

$PM \times OM = \text{rectangle OMPK}$. But the total utility obtained by consuming OM is represented by the area OMPD. Therefore consumers' surplus $= OMPD - OMPK = DPK$.

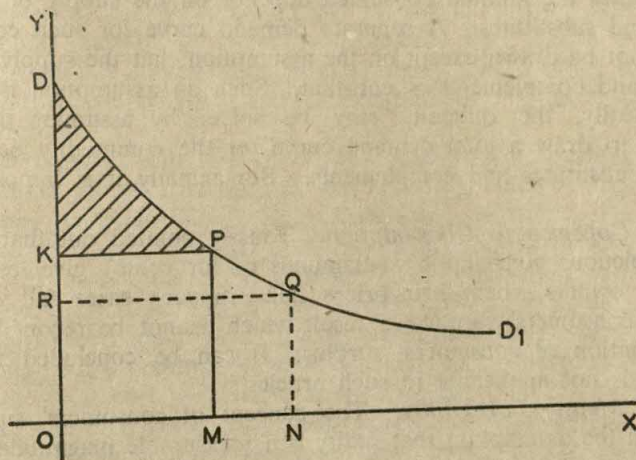


FIG. 9

If the price of the commodity falls to QN, the consumers' surplus increases to DQR. Hence fall of price increases consumers' surplus. Conversely, a rise of price diminishes it.

Assumptions. The concept of consumers' surplus, as elucidated by Marshall, makes the following assumptions :

1. Utility is measurable.
2. The marginal utility of money is constant. (See para 6, p. 110).
3. The demand schedule of a commodity is independent of other prices and their quantities.
4. All other things, including what is stated in the above para, remain the same. This assumption is called *ceteris paribus*.

Criticisms of the Concept. The concept of consumers' surplus is full of difficulties and has been subjected to many criticisms.

1. *Impossible to measure.* It is impossible to measure the surplus in terms of money. The area DPK in Fig. 9 can be measured only if the demand curve is known at least from D to P. But in actual life we know only a few points of the demand curve near about the ruling price.

2. *Utility from necessities is infinite.* In the case of necessities the concept of consumers' surplus is meaningless. Without necessities, such as food and water, a man cannot live. Rather than go without food and water, a man will surrender all his possessions. Hence we

can argue that the utility obtained from necessities is infinite and so the consumers' surplus obtained from them is also infinite.

3. *The supply of complements and substitutes.* In the case of most commodities the amount consumed depends on the supply of complements and substitutes. A separate demand curve for such commodities cannot be drawn except on the assumption that the supply of substitutes and complements is constant. Such an assumption is unreal. Theoretically, the difficulty may be solved by assuming that it is possible to draw a joint demand curve for the commodity concerned and its substitutes and complements. But actually it is impossible to do so.

4. *Conspicuous Consumption.* Taussig pointed out that articles of conspicuous consumption (diamonds or fur coats) give less utility to their owners when their prices fall. In such cases fall of price reduces consumers' surplus—a result which cannot be reconciled with the definition of consumers' surplus. It can be concluded that the concept is not applicable to such articles.

5. *Measure of Utility.* The concept of consumers' surplus is based on the assumption that utility is a measurable magnitude. Most of the modern economists do not agree with this view.

6. *Is Utility of money constant?* Consumers' surplus can be measured in terms of money only if it is assumed that the marginal utility of money is constant. Marshall assumed it to be so. But it is an illogical assumption. Hicks considers this to be the greatest difficulty standing in the way of the acceptance of the concept. When a consumer buys more of a commodity his stock of money falls and the marginal utility of money to him increases. Reduction of the marginal utility of money will automatically involve the revaluation of the utilities obtained from the earlier units of the commodity used by the consumer. Marshall assumed that the amount spent by a consumer on a particular commodity is a small part of his total income and therefore, the expenditure of it does not affect the marginal utility of money to him. This assumption also is unrealistic.

Hicks' Formulation of the Concept of Consumers' Surplus. Hicks has tried to rehabilitate the concept of consumers' surplus by interpreting it through indifference curves. He showed that when the price of a commodity falls, two effects follow:

(a) The consumer can buy a little more of the commodity and use it in place of some other commodity the price of which has not fallen.

(b) The consumers' expenditure on the commodity is reduced. The consequence of (a) and (b) is that the consumer is better off than before. It is as if his income has increased. Hicks' con-

¹ Hicks, *Value and Capital*.

cluded that we can look upon consumers' surplus as the gain in money income caused by a fall in the price of a commodity. He has suggested various methods of measuring this gain.

Theoretical and Practical Utility of the Concept. The concept of consumers' surplus is not entirely unreal. The surplus exists, although it may not always be possible to measure it in terms of money. The following examples will show the theoretical and practical utility of the concept.

1. *Economic value v. Welfare.* The concept of consumers' surplus draws pointed attention to the fact that *economic value of a thing does not measure its total utility or its contribution to welfare.* The economic value of a glass of milk is about 25 P., but the total utility obtained by consuming milk is much greater than the number of glasses consumed multiplied by 25 P. The economic value of water is zero (no price is paid for it), but its contribution to welfare is great. If the supply of a commodity with inelastic demand (like rice) is increased the total consumer outlay falls, i.e., the total economic value is reduced, but the commodity gains considerably in welfare. *The difference between total welfare and total price is the consumers' surplus.*

2. *Benefits from economic environment.* Consumers' surplus indicates the benefits which an individual derives from the economic environment in which he lives. In an economically advanced community the supply of goods and services is more plentiful than in a backward community and therefore more consumers' surplus is enjoyed. The amount of surplus enjoyed may be used as an index for comparing the economic circumstances of different regions or of different time periods in the same region.

3. *Questions of Public Policy.* The concept of consumers' surplus is of assistance in the determination of certain question of public policy. The imposition of a tax on a commodity raises prices and reduces consumers' surplus. The utility of the additional revenue to the state must be weighed against the fall of consumers' surplus. If the latter is greater than the former the tax can be called a bad tax. Thus the concept is useful in the sphere of public finance.

Conclusion. In his book "*Lectures on Economic Principles*", Robertson² observes that the theory of consumers' surplus is, "both intellectually respectable and useful as a guide to practical action" provided "you do not expect too much of it".

Modern Views Regarding Consumers' Surplus. The current trend in economic thinking is to discard the concept of Consumers' Surplus from economic theory. Samuelson³ observes, that "the subject is of

² Robertson, *Ibid.*, Vol. I, p. 8.

³ Samuelson, *Foundations of Economic Analysis*, pp. 195-208.

historical and doctrinal interest, with a limited amount of appeal as a mathematical puzzle". The older economists, Marshall, Edgeworth and others, were accustomed to think of 'utility' as a measurable magnitude. They also assumed explicitly or implicitly, that the marginal utility of money was constant. Because of these assumptions they found no difficulty in making inter-individual comparisons of utility. Consumers' Surplus was to them a real and a measurable quantity. Modern economists are not willing to accept the two assumptions mentioned above. They therefore are in favour of eliminating the concept of Consumers' Surplus from economic discussions.

Hicks tried to rehabilitate the concept by equating Consumers' Surplus to the gain in money income which the consumers get when price falls. But Hicks admitted that the concept is not useful in the exposition of equilibrium conditions. Samuelson says: "Careful perusal of his (Hicks') argument simply confirms my belief that the economist.....had best dispense with Consumers' Surplus. It is a tool which can be used only by one who can get along without its use, and not by all such."

CONSUMERS' EQUILIBRIUM

The Neo-classical Theory. Analysis of consumer demand is the first step in the analysis of economic activity. Economists, therefore, devote considerable attention to the laws which govern consumer behaviour. The older writers, Marshall, Pigou and others built up a theory which is known as the Neo-classical Theory of Consumer Demand. This theory is based upon the concept of measurable utility and upon certain assumptions regarding human conduct deduced from Utilitarianism or Hedonism. The main propositions of the theory have been explained earlier in this chapter. They are brought together in the summary given below.

1. Goods and services are wanted because men derive 'utility' from them.
2. The 'utility' derived from each commodity can be measured in terms of money.
3. The utility derived by any person from any particular commodity depends upon the quantity of that commodity consumed or possessed by him. The total utility increases (up to a point) with increase of quantity but the marginal utility diminishes [This is the Law of Diminishing Utility.]
4. The total utility enjoyed by a person is the sum of the utilities obtained from each commodity.

Thus, if x_1, x_2, x_3 , etc. are the quantities of different commodities and $U(x_1)$ the function relating quantity to utility,

$$\begin{aligned} \text{Total Utility} &= u(x_1) + u(x_2) + u(x_3) + \dots \\ &= U(x_1, x_2, x_3, \dots) \end{aligned}$$

5. The quantity of a commodity which a consumer will purchase depends upon the price of that commodity and the income of the consumer. Therefore, the Demand Function of an individual can be represented as $D(x_1) = f(p_1, I)$ where x_1 is the quantity purchased, p_1 the price and I the income. Since marginal utility diminishes as x_1 increases, the price-quantity curve slopes downwards from left to right. [This is the Law of Demand.]

6. The Market Demand Function can be obtained by aggregating the individual demand functions, it being assumed that the utility schedule of a person is independent of the utility schedules of other persons.

7. The normal consumer in disposing of his income seeks to maximise his total utility. The total utility is maximum when the marginal utilities are equal. [This is the Law of Equimarginal Returns.] A consumer is at equilibrium "when this condition is fulfilled.

Assumptions. The Neo-classical Theory of Consumer Demand is based upon the following assumptions :

1. Human wants have certain characteristics (*e.g.*, wants as a whole are unlimited ; each particular want is satiable ; wants are complementary and competitive ; wants vary in their intensity). These characteristics are uniform, *i.e.*, they apply to all consumers.

2. The consumer's scale of wants remains unchanged in the short period.

3. The consumer has perfect knowledge of prices and qualities and always acts rationally in such a way as to maximise his total utility.

4. The demand functions are continuous, *i.e.*, commodities can be bought and sold in very small quantities.

5. Utility is a cardinal magnitude, capable of being measured in terms of money.

6. The marginal utility of money is constant.

Criticisms. The following criticisms have been advanced against the Neo-classical demand theory :

1. *Too much rationality.* The theory imputes too much rationality to human conduct. It is assumed that consumers can calculate the varying amounts of utility obtained from different units of a commodity and that they make their purchases on the basis of such rational calculation. J. M. Clark says, that utility analysis, "suffers from an irrational passion for dispassionate rationality". It is argued by many economists that this assumption is wrong because of the following reasons :

(a) Human beings are not calculating machines.

(b) Buyers frequently act on impulse.

- (c) The goods people buy are determined by habit and not calculation.
- (d) People sometimes do not know the means by which their wants can be satisfied.
- (e) Buyer's choice is frequently guided by seller's advertisements.
- (f) Purchases are sometimes made on an "explorative" or "experimental" basis. People sometimes buy a commodity not because they want it but because they want to experiment on and explore the "desire for a new want".

Stigler⁴ tries to answer the aforesaid criticisms as follows: It is true that many purchases are made from habit but every habit is formed because it is advantageous on average. If a particular habit produces loss it will be abandoned in due course. Acting on habit merely saves the trouble of fresh decision-making every time one makes a purchase. So this is not a valid objection. As regards purchases based on impulse or on seller's advertisement or which are merely explorative, such cases constitute only a minor part of the total purchases and therefore can be neglected. The marginal utility analysis is reasonably accurate as regards commodities and services purchased regularly. If we do not assume the existence of rationality in human conduct, it is impossible to analyse the complex facts of economic life adequately.

2. *Marshallian analysis is inadequate.* The 'utility' derived by a person from a commodity does not depend only on the quantity of it possessed or consumed by him. It also depends upon the quantity owned and possessed by others. According to Duesenberry⁵ the consumption habits of a person are influenced by the consumption habits of persons of higher income levels and of his social superiors. Thus, the demand for goods depends upon the *relative* standard of living. It also depends upon *past* incomes, because men cannot quickly adjust their expenditure patterns according to changes of income. For these reasons it can be said that the Marshallian analysis of demand is inadequate.

3. *The cardinal concept of utility is not acceptable.* Many writers are unable to accept the cardinal concept of utility. Pareto observed that 'utility' cannot be measured in precise quantitative terms, although different "lumps" of it can be set out in an order of magnitude. Hicks, Allen and others proceed a step further and say that it is not even possible to grade utility in an order of magnitude for that implies the possibility of cardinal measurement.

⁴ Stigler, *Theory of Price*.

⁵ Duesenberry, *Saving and the Theory of Consumer Behaviour*, Ch. III.

4. *The marginal utility of money is not constant.* It is improper to assume that the marginal utility of money is constant. (See para 6, p. 110).

RECOMMENDED READINGS

1. Boulding, *Economic Analysis*, Chs. 3, 29, 30.
2. Cairncross, *Introduction to Economics*, Ch. 14.
3. Stigler, *The Theory of Price*, Chs. 5, 6.
4. Samuelson, *Economics* (9th Edition), Chs. 4, 20, 22.
5. Benham, *Economics*, Ch. XIII.
6. Watson, *Price Theory and its Uses*, Chs. 2-4.

EXERCISES

1. State the nature of human wants and their economic significance.
2. Explain why the demand for a commodity increases if its price falls. (C.U. B.A. '67; B.Com. '69).
3. Is it possible for the demand for a commodity to fall as a result of a fall in its price, other things remaining constant? Give reasons for your answer. (C.U. B.A. '68).
4. Explain why demand curves slope downward to the right. Are there any exceptions to this rule? (C.U. B.A. '62, '65; B.Com. '63, '66).
5. Explain the law of demand with the help of the income and substitution effects. Use a price increase as a point of departure for your discussions. (C.U. B.A. '72).
6. Explain the concept of 'elasticity of demand', and relate it to the slope of the demand curve. (C.U. B.Com. '74).
7. Discuss the importance of the concept of elasticity of demand. Explain the factors on which elasticity of demand for a commodity depends. (C.U. B.Com. '70).
8. What are the major determinants of elasticity of demand? Use these determinants in judging whether the demand for the following commodities is elastic or inelastic: (a) Gold necklaces; (b) Salt; (c) Cigarettes; (d) Motor cars; (e) Text books. (C.U. B.A. '72).
9. Suppose that the demand for tea in Assam increases by 3 per cent, while its price decreases by 4 per cent. How would you attempt to ascertain the elasticity of its demand? (Gau. B.A. '63).
10. Explain the concepts of price-elasticity and income elasticity of demand for a commodity. Show how price-elasticity changes with variation in price on a straight line demand curve or a commodity (C.U. B.A. '69).
11. Explain the Principle of Substitution and the Law of Equimarginal Returns and consider the limitations of the Law. (C.U. B.Com. '62, '64; Gau. B.A. '62).
12. How does a consumer distribute a given amount of money in purchasing two commodities, the prices of which are given? (C.U. B.A. '62; B.Com. '72).
13. State and explain the Law of Equimarginal Utility. How does indivisibility affect it? (C.U. B.A. Part I, '65).
14. Distinguish between marginal utility and total utility and discuss the Law of Equimarginal Utility. (Compare C.A. May '65).
15. Write short notes on—Giffen goods (C.U. B.A. '71); Demonstration Effect (C.U. B.A. '72).
16. Explain the concept of Consumer's Surplus. What are the uses of this concept in economic theory? (C.U. B.Com. '73).

CHAPTER 9

INDIFFERENCE CURVE ANALYSIS

THE PREFERENCE APPROACH

The defects and deficiencies of the "utility" concept and marginal utility analysis have led to the formulation of a demand theory based upon consumers' preferences. This theory is described as the Preference Approach. It shows that we can find out the equilibrium position of the consumer without using the concept of a numerically measurable utility. This line of analysis was begun by Pareto. It was developed and popularised by Hicks, Allen and others. The principal tool of analysis used in the theory is the Indifference Curve. How this tool is used is described below.

INDIFFERENCE CURVES

Definition. According to the Preference Approach, it is impossible for the consumer to say how much utility he derives from a thing, because utility is not a measurable magnitude. But a consumer can compare two or more combinations of goods and say which of them he likes best or whether he likes them all equally well. The Laws of Consumer Demand can be deduced from these preferences.

Suppose that a consumer is asked to choose between the following two combinations :

- a. 4 cakes and 2 oranges
- b. 2 " " 3 "

He may prefer *a* to *b* or *b* to *a* or he may like both combinations equally well. In the last case we say that he is *indifferent* as between them. It is not necessary for making decisions like the above, to know "how much" utility is obtained from a cake or an orange. The consumer can compare the relative desirability of, or indifference between, two combinations of goods without knowing the exact amount of "utility" and "satisfaction" obtained from each combination.

The Diagram. To show how Indifference Curves are constructed let us take the example of a consumer purchasing two goods only, tea and coffee. He may prefer tea to coffee but if the price of coffee becomes relatively cheaper he may be induced to drink a few cups of it. If the price of tea becomes much cheaper he may give up coffee altogether. On the other hand, if the price of tea becomes very high

he may be forced by lack of means to give up tea. Between these two extremes he will drink both tea and coffee but, will vary the proportions according to relative prices so that he obtains the advantages of small price changes of either commodity. It follows therefore that there are more than one combinations of tea and coffee which are *equally satisfactory* to him. Suppose that the following combinations are equivalent.

(i)	10 cups of tea and	5 cups of coffee
(ii)	9 " " " "	6 " " "
(iii)	8 " " " "	8 " " "
(iv)	7 " " " "	11 " " "

Equal-utility contour. These combinations are represented by small circles in Fig. 10 where tea is measured along OX and coffee along OY. There must be many other equivalent combinations in between the circles. Let I_0 be a continuous line joining the small circles and other similar points. The curve I_0 is called an Indifference Curve. Thus an Indifference Curve may be defined as a curve which shows *combinations of goods which are equivalent to one another*. The consumer has no reason to prefer any of the combinations on the curve to any other on the same curve. He is indifferent as to which of these combinations he uses. Each indifference curve is an equal-utility contour.

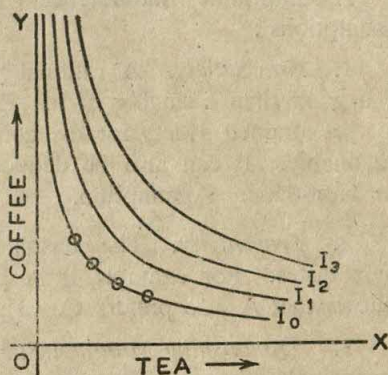


FIG. 10

Indifference Map of the Consumer. There will be other combinations which are superior to all the combinations on I_0 . For example, the consumer may have

(v)	10 cups of tea and	6 cups of coffee
(vi)	9 " " " "	7 " " "
(vii)	8 " " " "	9 " " "
(viii)	7 " " " "	12 " " "

Combinations (v), (vi), (vii), and (viii) may be equivalent to one another but all are superior to combinations (i), (ii), (iii) and

(iv) because more coffee is obtained with the same quantity of tea. A line joining combinations (v), (vi), (vii) and (viii) will be a higher indifference curve (I_1 in the figure). Similarly there may be other indifference curves I_2 , I_3 , etc. The number of possible indifference curves is unlimited. All the indifference curves taken together constitute the Indifference Map of the Consumer.

The levels of satisfaction. The indifference curves on the Map show different levels of satisfaction or total utility. The higher the position of a curve (*i.e.*, the further out it is on the Map) the better it is for the consumer. Thus I_3 is superior to I_2 , I_2 to I_1 and so on. The consumer will like to be *as high as possible on his indifference map*.

✓ **Assumptions.** Indifference Curves are based upon the following assumptions :

1. **Non-Satiety.** A rational person will prefer a larger quantity of a good than a smaller of it. It is assumed that the consumer has not yet attained satiety for the good. The assumption is realistic and reasonable. It can also be deduced from intuition. It is known as the Non-Satiety Assumption.

2. **Transitivity.** The consumer is supposed to be consistent about their tastes. For example if A prefers B and B prefers C then it follows that A also prefers C. This assumption is called Transitivity.

3. **Diminishing Marginal Substitutability.** Suppose that a person consumes Coffee and Tea. It can be assumed that as more and more units of coffee are substituted for tea, the consumer will be willing to give up fewer and fewer units of tea for additional units of coffee. As the quantity of coffee consumed increases, more of it will be required to compensate for loss of tea. This follows from the principle that as the consumption of coffee increases the desire for it will fall and as the consumption of tea decreases the desire for it will increase. Therefore the marginal rate of substitution of coffee for tea increases as the quantity of coffee increases relatively to tea. Alternatively we can say that the marginal rate of substitution of tea for coffee diminishes as the supply of tea diminishes. This is called the *Principle of Diminishing Marginal substitutability*. It is assumed that the two goods are not perfect substitutes for one another and that want for the goods are not satiable.

The Principle of Diminishing Marginal Substitutability corresponds to the older law of diminishing marginal utility.

✓ PROPERTIES AND CHARACTERISTICS OF INDIFFERENCE CURVES

There are certain rules which determine the *usual* shape of indifference curves. They are as follows.

1. *An indifference curve cannot intersect with itself or any other indifference curve*: This can be proved by showing that if two indifference curves on the same indifference map intersect, an absurd conclusion follows. Suppose that

I_1 and I_2 intersect as in Fig. 11.

Then from I_1

$$\begin{aligned} & \text{OA of X} + \text{OE of Y} \\ & = \text{OB of X} + \text{OC of Y} \end{aligned}$$

Also from I_2

$$\begin{aligned} & \text{OA of X} + \text{OE of Y} \\ & = \text{OB of X} + \text{OD of Y} \end{aligned}$$

$$\therefore \text{OB of X} + \text{OC of Y} = \text{OB of X} + \text{OD of Y}$$

$$\text{i.e., OC of Y} = \text{OD of Y}$$

which is absurd, because a larger quantity of Y cannot be equivalent to a smaller quantity of the same thing. Therefore, no two indifference curves can intersect. This rule follows from assumptions 1 and 2. (See above).

2. *Indifference curves have a downward slope*: Let us consider any two combination of goods on the same indifference curve, such as (v) and (vi) on the previous pages. Combination (vi) has one cup of coffee *more* than combination (v). To be equivalent to (v) it must have *less* tea. Hence, when the quantity of one commodity (X) in a combination of two goods increase, the quantity of the other commodity (Y) must decline. Therefore, an indifference curve must slope downwards from left to right. This rule follows from assumption 1. (See above).

3. *Indifference curves are convex to the origin*: As we proceed downwards along any indifference curve the quantity of one commodity consumed (X) increases and that of the other (Y) diminishes. The marginal utility of X therefore, decreases while that of Y increases. It follows that an increasing quantity of X will be required to compensate for the loss of Y. Only a curve convex to the origin can show this fact. This rule follows from assumption 3. (See above).

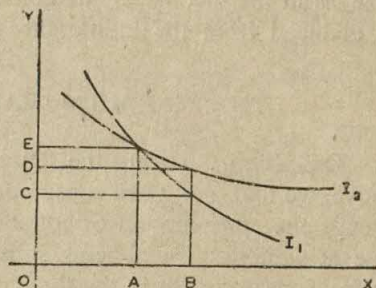


FIG. 11

Conclusion. Thus we conclude that (i) each indifference curve is a distinct line-(ii) it slopes downwards from left to right and (iii) it

is convex to the origin. There are, however, certain exceptions to rule 3. Under certain special circumstances an indifference curve may be a straight line or even concave to the origin.

If we know the budget (or the spending power) of the consumer and his Indifference Map we can find out what quantity of each commodity he will purchase. With the same information we can measure the effect of changes in the prices of the commodities and of changes in the income of the consumer. Laws relating to demand can be deduced from the indifference curves.

THE MARGINAL RATE OF SUBSTITUTION

Definition. Taking the figures given in (i), (ii), (iii) and (iv) above, we find that when consumption of tea is reduced from 9 to 8 and 7 cups the consumption of coffee increases from 6 to 8 and 11. The rate at which coffee is being substituted for tea is 1, 2 and 3 cups of coffee per cup of tea in the three cases respectively. This rate is called the *rate of substitution* of coffee for tea. The quantity of coffee which would just compensate the consumer for the loss of a marginal unit of tea is called the *Marginal Rate of Substitution* of tea for coffee.

The marginal rate of substitution between any two goods depends on their relative prices. Suppose that to a consumer, 3 cups of tea are equivalent to 5 cups of coffee. At existing prices he is prepared to spend, say Rs. 2, on either. If the price of tea rises, he will gain by taking less tea and more coffee. Therefore the quantity of coffee which will just compensate the consumer for the loss of one cup of tea will depend on the price of coffee as compared to the price of tea.

Diminishing Marginal Substitutability. See p. 118

Elasticity of Substitution. The elasticity of substitution, between any two goods, measures the extent to which one good can be substituted for another if the consumer is to remain on the same indifference curve (i.e., enjoy the same total utility). Elasticity of Substitution between two goods X and Y

$$= \frac{\text{relative increase in the ratio between X and Y}}{\text{relative decrease in the marginal significance of X in terms of Y}}$$

When the elasticity of substitution is infinite, the indifference curve is a straight line. The two goods are perfect substitutes of or identical with each other. When the elasticity of substitution is zero, the two goods cannot be substituted for each other.

THE PRICE LINE

Suppose that a consumer has a fixed income T which he spends on two goods X and Y . In Fig. 12, X is represented on OX and Y on OY . His indifference curves are I_1, I_2 , etc.

Suppose that P_x is the price of X and P_y is the price of Y . Let OA be the amount of Y which can be purchased if the whole of the consumer's income (T) is spent on Y . Then $OA \times P_y = T$. Similarly, let OB be the amount of X which can be purchased with T . Then $OB \times P_x = T$. Join A and B . AB is called the *Price Line or the Budget Line or the Consumption-Possibility Line*. The line AB has important characteristics. Every point on it shows a possible distribution of the consumer's income (T) between X and Y .

P and N are two points on AB . P shows OM of X and PM of Y . N shows OC of X and NC of Y . The purchase of OM of X and

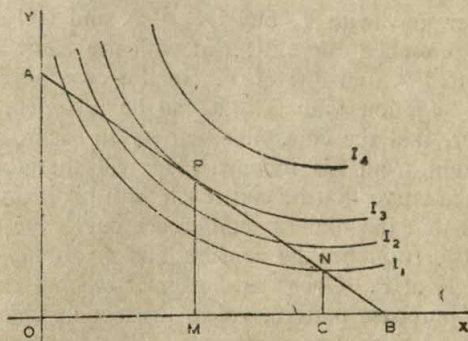


FIG. 12

PM of Y will exhaust the consumer's income. So also will be the purchase of OC of X and NC of Y . This can be proved as follows.

Let us regard P as any point on AB . If the consumer buys OM of X and PM of Y , his total expenditure

$$\begin{aligned}
 &= OM \times P_x + PM \times P_y \\
 &= OM \times \frac{T}{OB} + PM \times \frac{T}{OA} \quad (\text{Because } T = OB \times P_x = OA \times P_y) \\
 &= T \left(\frac{OM}{OB} + \frac{PM}{OA} \right) \\
 &= T \left(\frac{OM}{OB} + \frac{BM}{OB} \right) \quad \text{because } BPM \text{ and } BAO \text{ are similar triangles} \\
 &= T \frac{OM + MB}{OB} = T
 \end{aligned}$$

It can also be shown that at the prices P_x and P_y , T is wholly spent only at points lying on AB. So, all possible distributions of the consumer's income between X and Y, at the given prices, are to be found on AB. This property of AB enables us to pinpoint the equilibrium position of the consumer.

(The equation of the Price Line is $Y = p_1x + p_2y$ where $Y = \text{income}$ (or budget of the consumer) and p_1, p_2 are prices of x and y respectively. If p_1, p_2 and Y are constant, the Price Line is a straight line.)

EQUILIBRIUM OF THE CONSUMER

The equilibrium position of the consumer is shown in Fig. 12. We assume a consumer with a fixed income T, spending the whole of his income only on two goods, X and Y. AB is the Consumption Possibility Line and I_1, I_2 etc. are the indifference curves of the consumer.

The consumer may with T, buy OC of X and NC of Y. In this case he is on indifference curve I_1 . But with the same income T, he can also buy OM of X and PM of Y. In this case he is on I_3 which denotes a better situation than I_1 . It can be assumed, as a rule of rational behaviour, that the consumer will try to secure the maximum possible satisfaction from his income. He will therefore be on the highest indifference curve that he can reach with his income. A glance at Fig. 12 shows that the highest indifference curve the consumer can reach is I_3 which just touches the consumption possibility line AB. AB is the tangent of I_3 at P. Once the consumer reaches this position he will not shift his purchase pattern, unless his income changes or unless the price of X or of Y becomes different. From this reasoning we can conclude that the equilibrium position of the consumer is at the point where the Consumption Possibility Line is the tangent of an Indifference Curve.

If the consumer is at a point on his consumption-possibility line where it crosses an indifference curve (such as N in Fig. 13) he is not getting the maximum possible from his income. He is on a lower indifference curve (I_1). He can improve his position by changing his purchases in such a way as to be on P, which is on a higher indifference curve (I_3). N is therefore not a position of equilibrium. If the consumer happens to be on a point like N, he should move towards P, the point of tangency between the consumption-possibility line and an indifference curve.

At the equilibrium point P, the slope of I_3 is the same as the slope of AB. It can be shown that the slope of I_3 at any point measures the ratio of substitution between X and Y at that point. Also, the slope of AB = tangent of angle OBA = $OA \div OB$ = the ratio between the price of X and the price of Y. Hence, at the position of equilibrium,

the ratio between the prices of the two goods just equals the ratio of substitution between them.

✓ EFFECTS OF CHANGE OF INCOME

Suppose that when the consumer's income is T , the Price Line is AB . The equilibrium position is R where AB touches indifference curve I_1 .

If the consumer's income increases, he will be able to buy more X and Y . The Price Line will move outwards parallel to itself, becoming (say) CD . The equilibrium position of the consumer will now be S , where CD touches another indifference curve I_2 . If the income

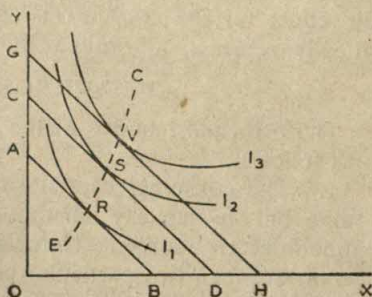


FIG. 13

increases again, the Price Line will move further outwards. If it is now GH , the consumer will be at equilibrium at V . If we join R , S , V and similar other points of tangency we get a line like EC . This line shows the effects of income changes on consumption. It is called the Income-Consumption Curve or the Expenditure-Consumption Curve. When income increases the consumer moves upwards along EC ; when income decreases he moves downwards along CE .

The shape of EC depends on the shape of the indifference curves. In case of inferior goods it will bend away from the axis which represents such goods, showing that as income increases, the consumption of such a good decreases.

✓ EFFECTS OF PRICE CHANGES

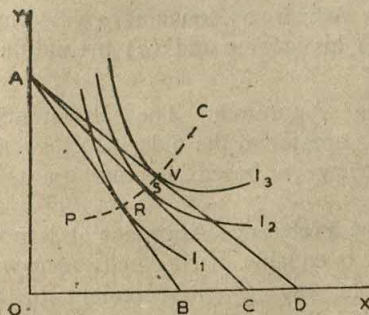


FIG. 14

Suppose that AB is the Price Line when the price of X is such that the consumer can buy OB with his income. The consumer is at equilibrium at R . Suppose now that the price of X falls. The consumer can now buy more X . So the Price Line becomes (say) AC . The equilibrium position is now S , where AC touches indifference curve I_2 . If the price of X falls further, the consumer will be at equilibrium at a point like V . A line joining R , S , V , and similar

other points shows the effects of price changes on consumption. It is

called the Price Consumption Curve. When the prices of both the commodities change, the positions of both A and B change. The point of tangency between the new price line and an indifference curve shows the new equilibrium position. So all prices changes, and their effect on the consumer's equilibrium position, can be diagrammatically represented on the Indifference Map of the consumer.

THE THEORY SUMMED UP

The principal features of the Preference Approach can be summed up as follows.

1. The consumer cannot say how much 'utility' he derives from a thing but he can say whether he prefers a certain combination of commodities to another. Naturally he can indicate when he is *indifferent* between two particular combinations of goods (*i.e.*, likes them equally). The points of indifference, at a particular level of satisfaction, when joined together produces a curve known as the Indifference Curve. The preferences of a consumer are shown by these curves. All the curves taken together constitute the Indifference Map of the consumer.
2. On the Indifference Map we can draw a line which shows how much of each commodity the consumer can buy at the current prices with his income. This line is called the Consumption Possibility Line or Budget Line or Price Line. The point where the Price Line touches an Indifference Curve shows the combination of commodities which is best for the consumer. The consumer is at equilibrium when he purchases this combination of goods.
3. Changes in the habits and tastes of the consumer will change his Indifference Map. The position of equilibrium will change when the indifference map is altered or when the prices of the goods, *i.e.*, relative prices change.
4. The amount of a commodity which a consumer will buy depends upon : (a) relative prices, (b) his income and (c) his indifference map. //

Advantages of the Preference Approach. The Preference Approach is generally considered to be superior to the older neoclassical theory of consumer demand. This view is based mainly on the following grounds.¹

1. *Fewer Assumptions.* Under the Preference Approach it is not necessary to assume that the consumer is capable of *cardinally measuring the amount of utility* obtained from any given increment of a commodity. All that is assumed is that the consumer can weigh the relative desirability of different combinations of goods. The concept of utility is replaced by the concept of the marginal rate of substitution.

¹ See article of Haley in *Survey of Contemporary Economics* (Ellis).

2. The older theory assumes that the marginal utility of money to the consumer remains constant. There is no such assumption in preference analysis.

Thus the new theory of consumer demand is based on *fewer assumptions*. It also avoids the use of the concept of utility. Therefore it is theoretically superior to the older theory.

3. The new theory makes it easy to distinguish between the effect of a *change in income* and a *change in relative prices* upon the demand for a commodity. If the price of X falls relatively to the price of Y, there will be increased demand for X. The increase can be broken down into two parts, one part attributable to the fact that the consumer's income is in effect increased by the fall in price of X (the Income Effect), the other part attributable to the fact that the consumer will increase his consumption of X at the expense of other commodities because of the relative cheapness of X (the Substitution Effect).

4. Hicks utilises the concept of the marginal rate of substitution for the definition of *Substitutes* and *Complementary Goods*. Two goods X and Y are substitutes of each other if a decrease in the price of X (the price of Y remaining unchanged) has the effect of decreasing the marginal rate of substitution of Y for money. X and Y are complementary goods if a decrease in the price of X has the reverse effect. In other words, the tendency to consume more of X will be accompanied by a tendency to consume less of Y if X and Y are substitutes, and more of Y if X and Y are complements. (These consequences will appear quite apart from any income effect of the decrease in the price of X). Hicks' definition avoids the assumption of a cardinally measurable utility.

5. Hicks has shown that it is possible to define the concept of consumers' surplus *without assuming either measurable utility or constancy of the marginal utility of money*. The advantage which a consumer gets from a given price situation can be measured in terms of gains or losses of money income. There are several ways of measuring it.

Criticisms of Preference Approach. The preference approach is theoretically superior to the older cardinal analysis and most modern writers use it. Nevertheless, certain criticisms have been advanced against it. They are mentioned below.

1. *Cardinal Utility is realistic.* F. H. Knight and others argue that the individual, when deciding the allocation of his income, does not think in terms of the relative importance of small increments of one commodity *versus* that of another but in terms of an estimated quantity of satisfaction to be expected from a small increment of the commodity. Since the individual *thinks* in terms of cardinal utility and increments

of total satisfaction, it is a mistake not to base the theory of demand on these concepts.

2. *Too much rationality.* The new theory, like the older one, attributes too much rationality to the individual. It assumes that the consumer is able to measure his preferences in a coldly rational way.

3. *Too many situations.* Boulding² says that "In seeking to cover the whole field of potential preference they (the indifference curves) seem to state more than what actually exists in the mind. We make choices in particular situations, we do not contemplate making choices in an indefinitely large number of situations".

4. *Too many choices.* In actual life the consumer is faced with an immensely large number of commodities and services from which he is to make his choices. The indifference curve apparatus with its assumption of homogeneous goods measured on the respective axes seems to be an inadequate tool for their analysis.

5. *Too much complexity.* Boulding points out that according to the new theory, the preference schedule is invariant with respect to the opportunity function and the prices of assets. But this is not correct in cases of conspicuous consumption and speculative purchases. In the latter case, price changes produce expectations of further price changes and affect preference. Hence, any law of demand or of effect of price changes on consumption cannot be drawn from indifference curve analysis. Boulding's conclusion is that, "The complexity of general preference analysis hardly seems to be justified by the meagre additional results obtained from it."

6. *Empiric research is not possible.* The indifference curve approach cannot be used for empiric research. The functions involved cannot be statistically verified.

7. *A short run phenomenon.* "The individual's map of indifference curves may be a short run phenomenon subject to frequent and possibly capricious change."—Haley.

8. *Ordinal Utility is not nearer to truth.* With reference to the argument that the preference approach involves less assumptions than the older analysis and is therefore theoretically better, Robertson³ observes as follows: "The fact that the latter hypothesis (ordinal utility), the more complicated of the two psychologically, happens to be more economical logically, affords no guarantee whatever that it is nearer to the truth". (Robertson asks, shall we ignore four-footed animals because only two feet are needed for walking?)

² Boulding, *Reconstruction of Economics*, pp. 81-83.

³ Robertson, "Utility and all What?" *Economic Journal*, 1954.

RECOMMENDED READINGS.

1. Hicks, *Value and Capital*, Chs. I & II.
2. Ryan, *Price Theory*, Ch. 1.
3. Stonier and Hague, *A Textbook of Economic Theory*, Chs. II-IV.
4. Stigler, *The Theory of Price*, Chs. 5 & 6.
5. Henderson and Quandt, *Microeconomic Theory*, Ch. 2.
6. Samuelson, *Economics*, (9th edition), Ch. 22, Appendix.
7. Watson, *Price Theory and its uses*, Ch. 5.

EXERCISES

1. A consumer has a given money income and can buy two goods at fixed prices. Draw a diagram showing his equilibrium position. Show also the equilibrium positions after (a) a decrease in his money income and (b) a rise in the price of one of the goods. (C.U. B.A. '65, '71.)

2. If the consumer is at a point on his consumption-possibility line where it crosses an indifference curve, explain why he cannot have reached equilibrium. Which way would he move? (C.U. B.A. '64.)

3. Explain the properties of an indifference curve. (C.U. B.A. '65.)

4. Define the concepts of "indifference curve" and "indifference map" of a consumer. Analyse the equilibrium of a consumer spending a given amount of money income on two commodities with a fixed price-ratio. (C.U. B.A. '66.)

5. Write a note on Indifference Curves. How is this 'Preference Approach' an improvement over utility analysis? (Compare C.A. May '67.)

6. Explain how an indifference curve is constructed and define a consumer's marginal rate of substitution between two goods. (C.U. B.A. '69.)

7. How does a consumer distribute a given amount of money in purchasing two commodities, the prices of which are given? (C.U. B.Com. '72.)

CHAPTER 10

COST OF PRODUCTION AND SUPPLY

SUPPLY

Definition. 'Supply' means the quantity offered for sale by sellers, at particular prices, during a certain period of time. Supply, like demand, varies with price. It also varies with time. The supply of a commodity (say coal) available per day is equal to the stock in the hands of the dealers. During a longer period of time, for example a month, the supply may be increased by increasing the rate of production.

In some cases the supply of a commodity cannot be increased, e.g., old paintings. These are rare cases. In most cases supply is adjustable or flexible.

The Law of Supply. The supply of a commodity depends upon the price which the producers can obtain for it. If price rises, production becomes more profitable and supply increases (although the time required to bring forth the extra quantity will differ in different cases). Conversely, if price falls, production becomes less profitable and supply decreases. Thus there is a direct causal connection between the price offered and the supply available.

Marshall introduced the phrase 'supply price of a commodity' to denote how much supply would be forthcoming at different prices. Supply price can be compared with Demand-price. Just as there is a market demand schedule for every commodity, so also there is a market supply schedule for every commodity.

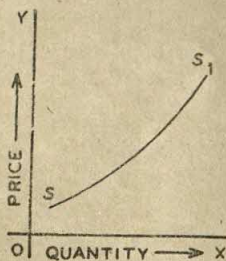


FIG. 15

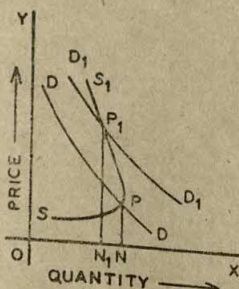


FIG. 16

The general rule, applicable to most commodities and services is, *higher the price greater the supply, lower the price lower the supply.*

This is known as the Law of Supply. The Law of Supply is diagrammatically represented by the curve SS_1 in Fig. 15. SS_1 moves upwards from left to right showing that as price increases, more supply is forthcoming.

Exceptions to the Law of Supply. There are certain exceptions to the Law of Supply.

1. In the labour market a rise of price (*i.e.*, a rise in the rate of wages), sometimes leads to a fall in the amount of labour supplied. Labourers generally have to work very hard. When wages rise they are able to earn, in less time, what they were earning before. Some of them will therefore work less with a view to get some rest. Also, when wages rise, wives, children and aged parents of labourers do not have to work to supplement the family earnings. Due to these reasons increase of wages sometimes reduces the supply of labour. This case is illustrated by the curve SS_1 in Fig. 16. We find here that at wages PN, the amount of labour available is ON. But at wages P_1N_1 only ON_1 labour is available. SS_1 shows what is known as a Backward Sloping Supply Curve. [See, "The Supply Curve of Labour"—Ch. 18.]

2. Under certain circumstances supply is always fixed, *e.g.*, pictures of a dead painter. In this case the supply curve is a vertical straight line. (See fig. 36. Ch. 13). It is not an upward sloping curve, as illustrated in the Law of Supply. (Fig. 15).

Elasticity of Supply. The concept of elasticity can be applied to supply. The supply of a commodity may be called elastic if a small change of price causes more than proportional change in supply. The supply is inelastic if a small change of price produces less than proportional change in supply. Elasticity of Supply is measured by the following ratio :

$$E_s = \frac{\text{proportional change in supply}}{\text{proportional change in price}}$$

$$= \frac{\text{Change in quantity supplied}}{\text{Original quantity supplied}} \div \frac{\text{Change in price}}{\text{Original price}}$$

Let q =original supply; Δq =change of supply; p =original price; and Δp =change of price. Then,

$$E_s = \frac{\Delta q}{q} \div \frac{\Delta p}{p} = \frac{\Delta q}{q} \times \frac{p}{\Delta p} = \frac{p}{q} \times \frac{\Delta q}{\Delta p}$$

Example : Suppose that the price of an article rises from Rs. 400 to Rs. 500 and as a result, the supply rises from 2000 to 3000. Then the numerical coefficient of,

$$E_s = \frac{400}{2000} \times \frac{1000}{100} = 2$$

Point elasticity: Different types of supply elasticity are shown in Fig. 17. SS_1 is the supply curve. KA, OB and LC are tangents to the supply curve at points A, B and C respectively. From the slope of the tangents we can calculate the elasticity of SS_1 at those points. (See "Geometrical Representation of Point Elasticity" in p. 98). In Fig. 17, at A, $E_s > 1$; at B, $E_s = 1$; and at C, $E_s < 1$.

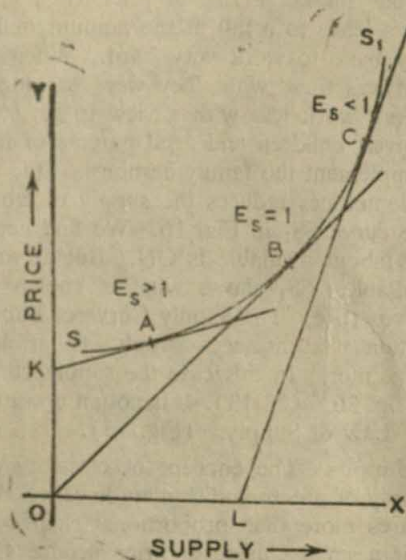


FIG. 17

Factors determining Elasticity of Supply. Elasticity of Supply measures the adjustability of supply to price changes. Such adjustability depends upon many factors. The most important factors are the following :

- (i) availability of the factors of production ;
- (ii) length of time needed to reorganise production in order to adjust supply to demand ;
- (iii) possibilities of altering the technique of production ;
- (iv) availability of alternative markets.

If the producer has several available markets, a fall in price in one market will cause him to shift his goods to other markets and a rise in price in one market will induce him to shift his goods to that market. Thus supply in one of the markets will be elastic. Again, if the supplier produces a number of goods and can easily change from one type to another the supply of each article will be elastic. When a factory can be quickly expanded or closed down or when there is no

obstacle to the employees getting jobs elsewhere or when the capital equipment can be readily diverted to other uses, the supply is elastic. When the necessary factors of production are easily available, supply is elastic. When they are not easily available, supply is inelastic. The non-availability of even one factor will make supply inelastic if that factor is absolutely necessary for the production of the commodity concerned.

COST OF PRODUCTION

The term Cost of Production may be used in three different senses. It may mean money cost, real cost, or opportunity cost. These terms are explained below.

Money Cost of Production. Production requires inputs of various kinds, *e.g.*, raw materials, labour, management etc. The money required for purchasing the inputs, together with certain other items explained below, is called the money cost of production.

Accountants and economists use the term money cost in different senses. According to accountants, the money cost of producing an article includes only those costs which are directly paid out or accounted for by the producer. They are as follows—cost of raw materials; wages of labour; interest on money borrowed; rent of land and buildings; depreciation charges on fixed capital; and, taxes paid to the Government and local authorities. These items together constitute what may be called the Explicit Costs of Productions. Economists think that, in addition to the above, there are certain other items which ought to be included within the term money cost. They are as follows:

- (i) Wages for the work performed by the owner of the firm.
- (ii) Interest on the capital supplied by him.
- (iii) Rent of land and buildings belonging to him and used in production.
- (iv) Such profits as are considered usual or normal in that line of business.

Items (i) to (iii) are to be valued at the market rate for these services. They are called Implicit Costs by economists. Accountants do not include these items in cost, unless there is a special arrangement in any firm by which such an item appears as expenses in the account books of the firm. Item (iv) is important in the economic sense because if a firm's total revenue, obtained by selling its products, does not cover this item, the firm will go out of business in the long run.

Thus according to economists the term money cost of production includes *both implicit costs and explicit costs*. It includes such *profits* as are considered normal or reasonable in that line of business.

Real Cost of Production. Real Cost of Production is a subjective concept. It is used to denote the toil, trouble and sacrifice neces-

sary for producing a thing. The money paid for securing a factor of production is its money cost. The *efforts and sacrifices* of the factor or its owner is the real cost. Marshall defined the real cost of producing a thing as, "the exertions of all the different kinds of labour that are directly or indirectly involved in making it; together with the abstinence or rather waitings required for saving the capital used in making it".

Transfer Cost and Opportunity Cost. The concept of Opportunity Cost is used by economists for the purpose of emphasising the fact that every economic decision involves a *choice between alternatives*. A farmer growing wheat on his land might have used his factors of production to grow sugarcane or millets or some other agricultural product. Suppose that a farmer grows 100 tons of wheat on his land. Suppose that his next best alternative crop is maize and that he could have grown 120 tons of it with the factors he used for growing wheat. The 120 tons of maize (or its *value*) is the opportunity cost of 100 tons of wheat.

"In its modern form, the opportunity cost doctrine generally appears as a statement that the cost to the society of producing a unit of any given product, X, is the amount of the next most desirable product, say Y, which could be produced with the given marginal amount of input."—Liebhafsky.¹

"The opportunity cost of anything is the next-best alternative that could be produced instead by the same factors or by an equivalent group of factors, costing the same amount of money."—Benham. In calculating opportunity costs the *best* alternative is taken into account. There may exist a *series* of alternatives arranged in order of preference.

The idea of opportunity cost may be applied to consumption also. Suppose that a boy uses his pocket money to buy a box of chocolates instead of going to a cinema. Then the opportunity cost of a box of chocolates is the cinema ticket which was not purchased, *i.e.*, the alternative which was abandoned or foregone.

The concept of opportunity cost is important. It helps the economist in analysing how allocation of resources between the different branches of production takes place and how relative prices are determined.

To apply the opportunity cost doctrine it is necessary to *compare* the alternative choices open to the individual or to the society. Except in the case of close substitutes, comparison of different kinds of output can only be made in terms of their money value. Therefore, as Liebhafsky points out, present day notions of opportunity cost involves the condition that money value is a measure of utility.

¹ Liebhafsky, *The Nature of Price Theory*.

FIXED COSTS AND VARIABLE COSTS

The inputs, or factors of production, used by a firm can be divided into two classes. Some inputs can be used over a period of time for producing *more than one batch of goods*. The fixed capital of the firm (machinery, equipment, land and buildings) and the permanent staff of workers come within this class. There are other inputs which are exhausted by a single use, e.g., raw materials.

Suppose that a firm is equipped with plant, machinery and staff required for producing 500 units of an article per day. The cost of maintaining and replacing the machinery (depreciation charges) and the salary of the permanent staff will have to be paid by the firm whatever may be the actual output. Such costs are called Fixed Costs or Supplementary Costs or Overhead Expenses. They may be defined as costs which *do not vary* with the amount of output. On the other hand, the cost of raw materials used by the firm depends on the amount produced. Such costs are called Variable Costs or Prime Costs. They may be defined as costs which vary with the amount of output.

In the long run, the fixed capital may be altered and the organisation of the firm may be changed. Therefore in the long run all costs are variable. The distinction between fixed costs and variable costs is applicable to the short period only.

The total cost of production is obviously equal to fixed cost plus the variable cost. In the long run, the total revenue earned by a firm by selling its products must cover both its fixed costs and variable costs. Otherwise it will incur losses and abandon production. In the short run, however, a firm may continue to produce if its variable costs are covered, hoping that in the long run the position will improve and that it will recover its losses. (See Ch. 13.) But if the price is below the variable costs a firm will have to abandon production even in the short run.

Break-even Point and Shut Down Point. The level of output, at which the money cost of production per unit (variable cost plus fixed cost, including normal profits) is just equal to the market price, is called the Break-even point. If the firm earns more than what is required to cover fixed costs, normal profits and variable costs, the difference is called Excess Profits. If the market price is just equal to the variable costs, the firm reaches what is called the Shut Down Point. Unless the position improves, the firm will have to close down at this point.

AVERAGE COST AND MARGINAL COST

Average Cost. The Average Cost of Production of an article is the total cost divided by the total quantity produced. Suppose that the

total cost of producing 1000 units of a commodity (fixed costs+variable costs) is Rs. 2,000. Then the average cost is Rs. 2.

Marginal Cost. The Marginal Cost of Production is the extra cost of producing one more unit. Suppose that the total cost of producing 1000 units of a commodity is Rs. 2000 and that the total cost of producing 1001 units is Rs. 2003. Then the marginal cost of production is Rs. 3.

Let $C=f(q)$ represent the relationship between the total cost of production C and the quantity produced q . Then,

$$\text{Average Cost} = \frac{f(q)}{q} \text{ and } \text{Marginal Cost} = \frac{dC}{dq}.$$

Relationship between output and costs. Average costs and marginal costs vary with the scale of production and the amount of output. Every firm is equipped with a certain quantity of fixed capital (machinery, buildings etc.). The fixed equipment has a maximum capacity of production, the amount of which is determined by technical factors. Suppose that a firm has a maximum capacity of 500 units but produces only 300 units. If now production is increased, the variable costs (raw materials etc.) increase proportionately but the fixed costs (costs of capital equipment) remain the same. Therefore average cost will decrease until the limit of 500 units is reached. Thereafter, further increase of output will require expansion of the capital equipment. The fixed costs will then be different and the average cost may increase or decrease.

The relationship between output and costs may be represented by diagrams. Thus in Figs. 18 and 19 below, output is measured along OX. The curve CA shows the average cost of producing different quantities of output, and the curve CM shows the marginal cost at each level of output. These curves are drawn as continuous lines on the assumption that output and costs can be changed by infinitesimally small quantities. The usual shape of the average cost curve is like an U. (See below). Under special circumstances it may have different shapes. The marginal cost can be calculated from the figures relating to average costs. So the marginal cost curve can be drawn if the average cost is known. (See next section).

In the short run, i.e., so long as the capital equipment is unchanged, the fixed cost remains constant. Therefore the total cost of producing x units of goods = total fixed cost + the total variable cost of producing x units; and the total cost of producing $(x+1)$ units = total fixed cost + total variable of $(x+1)$ units. Hence, the extra cost of producing one more unit is total variable cost of $(x+1)$ units minus total variable cost of producing x units. We can therefore say that the short run marginal cost of production is equal

to the *addition to the variable cost* caused by increase of output by one unit.

RELATIONSHIP BETWEEN AVERAGE COST AND MARGINAL COST

The relationship between average cost and marginal cost is shown by the following rules :

1. If the average cost is constant, marginal cost = average cost.
2. When average cost is *falling*, the marginal cost is *lower* than the average cost.
3. When average cost is *rising*, the marginal cost is *greater* than the average cost.

The relationship may be diagrammatically illustrated as follows :

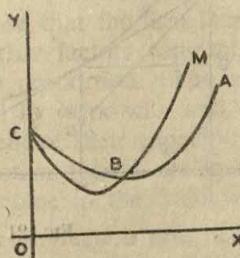


FIG. 18

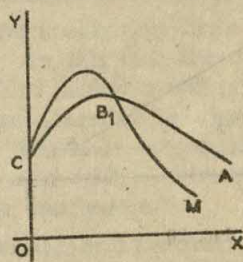


FIG. 19

Let CA be the curve of average cost. Its shape may be as in Fig. 18 (falling first, then rising from B) or as in Fig. 19 (rising first then falling from B_1).

In Fig. 18, the marginal cost curve CM will be below CA up to B (rule 1 above) and above it after B (rule 2).

In Fig. 19, CM will be above CA up to B_1 (rule 2) and below it after B_1 (rule 1).

The two curves must start at the same point because the marginal and average cost of a very small (near zero) output must be the same. Also marginal and average costs are equal at the lowest or highest points of the average cost curve (because CM and CA intersect there).

The rules concerning the relationship between Average Cost and Marginal Cost can be proved as follows :

Let C be the average cost of producing X units of a commodity and C_1 the average cost of producing (X+1) units. Then the marginal cost = (total cost of X+1 units) - (total cost of X units)

$=C_1(X+1)-CX=X(C_1-C)+C_1$. From this equation it follows that :—

- (1) If average cost is constant, $C_1=C$; therefore marginal cost $=C_1$ =average cost.
- (2) If average cost is falling, C_1-C is negative; therefore marginal cost is less than C_1 the average cost.
- (3) If average cost is rising, C_1-C is positive; therefore marginal cost is greater than C_1 the average cost.

How to construct the marginal cost curve from the average cost curve: If the average cost curve is known, the marginal cost curve can be constructed. The method is shown below.

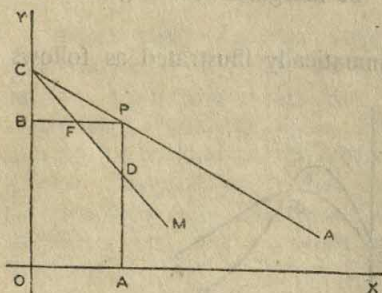


FIG. 20

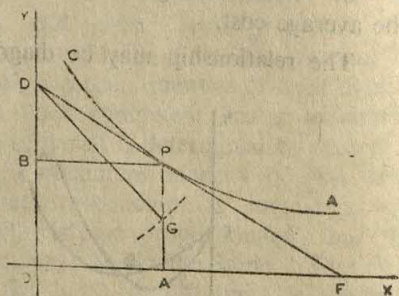


FIG. 21

1. In Fig. 20, CA shows average costs. CA is assumed to be a straight line. Let P be any point on it. Draw PA, PB at right angles to OX and OY.

Then total cost of output OA = the sum of the marginal costs = area OADC. Also from CA, the total cost of producing output OA = OAPB.

$\therefore$ OADC = OAPB. Subtract the common area OADFB. Then $\triangle PDF = \triangle CBF$. $\therefore CB = PD$.

$\therefore$ to construct the marginal cost line, mark off from PA a length PD equal to CB. The locus of D is the required line. In Fig. 20, CM is the locus of D and shows marginal costs.

2. If CA is a curve (Fig. 21) draw the tangent DF at P. From PA mark off PG equal to DB. It can be shown that G is the point on the marginal cost curve corresponding to output OA and average cost AP. The locus of G is the marginal cost curve.

THE LAW OF VARIABLE PROPORTIONS

The Law of Variable Proportions is a law relating to the effects (on total output) of varying the inputs or the factors of production

used by a firm. This law is also called the Law of Non-Proportional Output.

Every firm (farm or factory), requires the use of certain factors of production in correct proportions. The proportions are determined by technical considerations. Suppose that the technically best combination of factors in a certain firm is 'a' of land, 'b' of labour, 'c' of capital and 'd' of organisation. Suppose that with these amounts of factors, the total output is X. If now the factory uses 2a, 2b, 2c and 2d, the output must be *at least* 2X. The reason is that with the added factors a, b, c and d, a new firm, absolutely identical with the first one, might have been started. There is no reason why the second unit of production would produce less than the first unit with identical amounts of the factors of production. Most probably the output of 2a, 2b, 2c and 2d will be greater than double the output of a, b, c and d because of various internal economies that might be available.

But suppose that the firm increases only one factor (say) labour, keeping the other factors constant. In this case the output will not be increased in proportion. The added labourers will not get sufficient land or capital to work with and will therefore be unable to produce to the full extent of their capacity. The same consequence will follow if any of the other factors are increased without increasing all.

Thus we come to the following conclusions :

1. If a production unit, using the best possible combination of factors, increases all the factors proportionately the total output must increase at least proportionately.
2. If, however, only one factor is increased or some of the factors are increased without increasing all in proportion, the output will increase less than in proportion.

The above two propositions constitute what is called the Law of Variable Proportions or the Law of Non-Proportional Outputs.

The Law of Variable Proportions can be illustrated by a diagram. In fig. 22, units of a variable input (say, units of labour) are represented on the horizontal axis. The average products, corresponding to the units of variable input are shown by curve AP. The marginal products are shown by MP.

The average product and the marginal product obtained from the variable factor may increase in the earlier stages. But it is bound to decrease after a time. Therefore it follows that both the AP and the MP curves are 'hunch-shaped' rising first but falling ultimately. The relationship between the average curve and the marginal curve has been stated in p. 135. The MP curve lies above the AP curve so long as latter is rising and below the AP curve when the latter is falling.

When one input is variable, the relations between the input and product can be divided into three "Stages." In Stage I the average product per man increases, e.g., at A. At that stage the variable unit

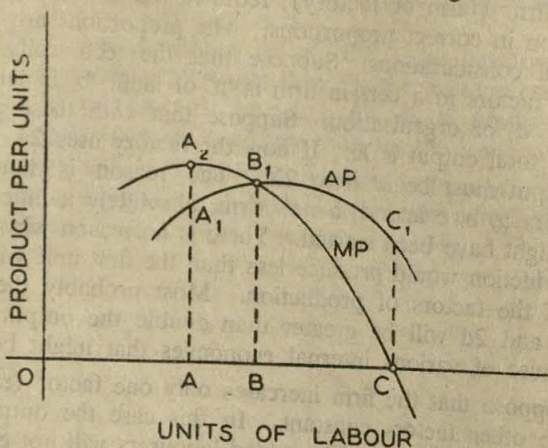


FIG. 22

is used *less* than optimum proportions of the inputs. Where the average product is at a maximum, Stage II starts. (say) at B. At that stage the total product continues to increase, but at a diminishing rate. In Stage III, total product is declining, e.g., at C. At the right of C the marginal product is negative and the average product continues to diminish. A rational firm chooses a volume of production in Stage II. A rational firm never operates at Stage III and beyond it.

Basis of the Law. The Law of Variable Proportions is based upon the fact that factors of production cannot be substituted for one another, except to a limited extent. Let us take the example of capital and labour. The latter can, to some extent, be used in place of the former. But labour is not equivalent to capital for all purposes. Increasing the quantity of labour alone would sooner or later bring about a situation when the output per labourer will diminish. Therefore, if it is desired to increase output proportionately, all factors must be increased in proportion.

"There is a limit to the extent to which one factor of production can be substituted for another, or in other words, the elasticity of substitution between different factors is not infinite."
—Joan Robinson.¹

Qualifications. It is to be noted that the Law of Variable Proportions is subject to the following qualifications:

¹ *Economics of Imperfect Competition.*

1. It is assumed that there is no change in the technique of production. If the technique changes, the proportions in which the different factors are used may have to be changed and the marginal product of a factor, under the new technique, may conceivably be larger than that under the older technique. The law will, however, apply under the new technique in course of time.

2. The law applies to the physical products obtained, not to their money value.

3. The law is true only on the assumption that "the factors (or at least the variable factor) can be broken up into small separable homogeneous units. This is admittedly an extreme abstraction as far as most factors and most production conditions are concerned."
—Cassels.²

THE SHORT RUN COST CURVES OF THE INDIVIDUAL FIRM

The money-cost of production varies with output but not in a simple, direct way. Let us first take into consideration a comparatively short period of time.

What is a Short Run? A 'short period' or 'short run' is defined as one in which there is no time to alter the fixed equipment (machines, buildings etc.) and the size of the organisation. Every production unit uses machines and buildings and operates on a certain scale. The number and size of machines and buildings and the scale of operations can be changed, but it takes time to do so. If it is desired to use better machines or bigger machines, the necessary purchases have to be made, larger buildings have to be constructed and new workers and managers have to be appointed. These things cannot be done quickly. Economists distinguish between the short run and the long run according to whether there is enough time to change the equipment and scale or not. (See Ch. 13).

The division of cost of production. Equipment and scale being fixed, the short-run cost of production can be divided into two parts :

- A. *Fixed Costs*—depreciation of machinery, salaries of the permanent staff, interest on loans etc. The total fixed cost remains constant in the short run whatever be the quantity produced.
- B. *Variable Costs*—costs of raw materials, wages of casual labour etc. These costs, except in the very early stages, must increase roughly in proportion to the quantity produced.

The total cost of production is equal to the sum of the total fixed cost and the total variable costs.

² J. M. Cassels in *Readings in the Theory of Income Distribution*, p. 103.

To take a concrete example let us suppose that there is a factory having the equipment and organisation necessary for producing 1000 units of a certain commodity per day. Suppose that the fixed cost is Rs. 500 per day and the variable costs are Rs. 3 per unit. The fixed cost has to be incurred whether the production is 0 or 1000 units, *i.e.*, the proprietors have to pay out Rs. 500 per day whatever be the quantity produced. The average fixed cost (*i.e.*, fixed cost per unit of output) is greatest when output is 1. It falls as output is increased up to 1000, the limit of capacity. This can be illustrated by the following table :

Total Output	Total Fixed Cost	Average Fixed Cost
1	Rs. 500	Rs. 500
5	"	Rs. 100
100	"	Rs. 5
500	"	Re. 1
1000	"	Re. 0.50

The variable cost per unit of output does not change much. In the early stages it may be falling slightly and in the later stages it may be rising slightly. For the sake of simplicity let us assume that, in the example given above, the variable costs are constant at Rs. 3 per unit. Then total variable costs are as follows :

Total Output	Average Variable Cost	Total Variable Cost
1	Rs. 3	Rs. 3
5	"	Rs. 15
100	"	Rs. 300
500	"	Rs. 1500
1000	"	Rs. 3000

Since, total cost = total fixed cost + total variable cost, we can combine the two above tables and find out that total cost and the average cost at each level of output.

Total Output	Total Fixed Cost	Total Variable Cost	Total Cost	Average Cost
1	Rs. 500	Rs. 3	Rs. 503	Rs. 503
5	"	Rs. 15	Rs. 515	Rs. 103
100	"	Rs. 300	Rs. 800	Rs. 8
500	"	Rs. 1500	Rs. 2000	Rs. 4
1000	"	Rs. 3000	Rs. 3500	Rs. 3.50

Thus we find that as output increases the average cost decreases. This will hold good up to the point of maximum capacity of the equipment and scale used in the factory. If production is pushed

beyond this level, without changing the equipment and scale, difficulties will arise. More intensive utilisation of the fixed equipment must necessarily lead to diminishing returns. Overtime allowance will have to be paid, the work period will have to be lengthened out into double or triple shifts. In effect there will be increase in the use of labour and raw-materials while capital equipment is kept constant. The law of variable proportions will apply and diminishing returns or increasing costs will begin to operate.

Thus in the short run we find that : *as output is increased the average cost falls up to the point of maximum capacity of the equipment and scale used in the firm and rises thereafter. The average cost curve is U-shaped, falling to a minimum and thereafter rising.*

The marginal cost curve will follow the average cost curve because they are related in a definite way. The marginal cost falls for initial increases of output and thereafter increases continuously.

✧ **Diagrammatic Illustration.** The short-run cost-curves can be diagrammatically represented as in the figure below :

The curve AFC shows the average fixed cost. It must slope downwards to the right because as output increases the average fixed cost diminishes.

The curve AFC is a rectangular hyperbola because, average fixed cost $\times$ quantity produced = a constant. The curve AVC shows the average variable cost.

It slopes downwards in the initial stages but thereafter rises slowly. The curve ATC shows average total cost. The ordinates of ATC are obtained by adding up the ordinates of AVC and AFC, i.e., if P, Q and M are corresponding points on the three curves, $PN + QN = MN$. The curve MC shows the marginal costs.

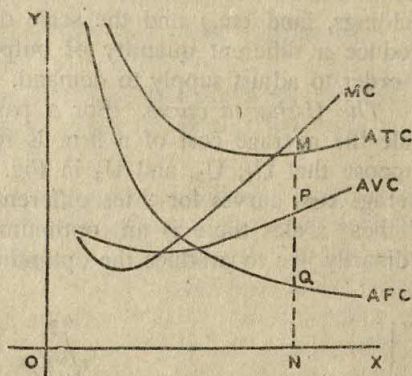


FIG. 23

The diagram given above shows the four short run cost curves of an individual firm. ATC is the curve of average total costs. It slopes downwards initially and then rises upwards.

The following points are to be noted :

(i) The short run average cost curve may be like a U or a V or like a 'dish', depending on the nature of the equipment and scale and their productivity. The relative lengths and inclinations of the upward and the downward portions of the curve differ from firm to

firm and from industry to industry. Generally speaking, the shape of the curve depends on the relative importance of the fixed and the variable costs of production and the degree of sharpness with which the law of diminishing returns is operative for the variable factors.

(ii) The curves show cost changes brought about by changes in output, other things remaining the same.

(iii) Cost changes may be due to extraneous factors, *e.g.*, rise in the price of raw materials, increase of wages etc. Such changes will be shown by shifting the curves to new positions.

(iv) **The Least Cost Point.** Average cost of production is lowest when the firm produces the maximum amount it can with its existing equipment and scale. This output is shown by the bottom point of the AC curve (such as R in Fig. 24).

✓ THE LONG RUN AVERAGE COST CURVE OF THE INDIVIDUAL FIRM

What is a Long Run? The long run is defined by economists as one in which there is sufficient time to alter the equipment (machinery, buildings, land etc.) and the scale of organisation with a view to produce a different quantity of output. Such changes are necessary in order to adjust supply to demand.

The U-shaped curve. For a particular level of equipment and scale the average cost of a firm is represented by a U-shaped curve. Suppose that U_1 , U_2 , and U_3 in Fig. 24, are three different short run average cost curves for three different scales of production. For each of these scales there is an optimum output. The producer would ordinarily like to produce the optimum output because his average cost

is least at this point. But if demand changes it may be necessary to increase or decrease his output and he may consider it desirable to alter his scale of production.

Suppose that at a particular time, a producer is under cost curve U_2 and produces OM. He finds it necessary to produce ON. If he continues under the old scale his average cost will be NT. Suppose that he alters his

scale so that his new cost curve is U_3 . The average cost of producing ON is now NA. NA is less than NT. So the new scale is preferable to the old and will be adopted. In the long run the average cost has changed from MR to NA.

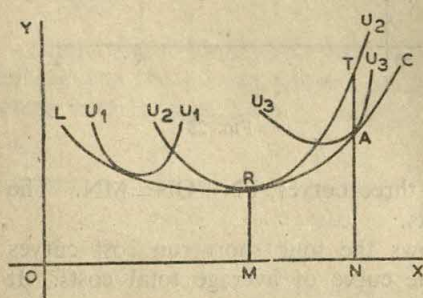


FIG. 24

Relationship. *Relationship between the long run cost curve and the short run cost curves:* The long run cost curve is a curve which shows how costs change when the scale of production is changed. This curve is obtained by drawing a line which touches the series of possible short run cost curves. In the figure given above LRAC is such a line. Mathematically speaking LRAC is the envelope of U_1 , U_2 , U_3 , etc.

The long run cost curve is the locus of equilibrium points on the short run cost curves. At the equilibrium points, a movement along the short run cost curve and a movement along the long run cost curve must involve the same change of cost. That is, the short run and the long run marginal costs must be equal. This condition is satisfied only if the long run average cost curve is *tangential* to the short run average cost curves.

Shape. *Shape of the Long Run Average Cost Curve:* The general opinion is that the long run average cost curve is U-shaped, like the short run average cost curve, but is flatter. This means three things:

- (i) The long run cost curve initially slopes downwards, *i.e.*, average costs fall.
- (ii) Later on, it slopes upwards, *i.e.*, average costs increase.
- (iii) The rate of increase or decrease of costs is less than what they are in the short run.

Proof. These propositions can be proved as follows: Initially the average cost decreases because certain economies of scale are available (the economies of large scale production; economical use of the indivisible factors of production etc.). With expansion of scale a stage comes when no further economies are available or the economies are more than counterbalanced by diseconomies (like managerial difficulties, higher transport costs etc.). When this stage comes the average cost begins to rise. In either case the rate of decrease or increase of costs is slower than the rates in the short run because fixed costs play a more important part in the short run. In the long run the fixed equipment can be altered. The equipment can be adjusted to the output. In the short run such adjustment is not possible and therefore costs vary considerably with variation of output.

Chamberlin¹ observes as follows: The long run average cost curve slopes downwards initially primarily for two reasons (i) increased specialisation made possible in general by the fact that the aggregate of resources is larger and (ii) qualitatively different and technologically more efficient units of factors, particularly machinery, made possible by a wise selection from among the greater range of technical

¹ Chamberlin, *Theory of Monopolistic Competition*. Appendix.

possibilities opened up by the greater resources. These two explanations overlap substantially. After the minimum point is reached, the AC-curve slopes upwards because of the greater complexity of the producing units as it grows in size, leading to increased difficulties of co-ordination and management. Economies and diseconomies arise not only from the proportions of the factors but also from the scale of operations.

Criticisms: In recent times the view that the average cost curve is U-shaped has been criticised on the following grounds.

1. *Is the AC a straight line?* Statistical evidence seems to show that in the short run average costs remain more or less constant near about the normal operating range of a firm. On the basis of this fact it has been argued that the short run AC curve is a straight line which turns up only towards its end.²

2. *Is the AC shaped like the L?* In the case of the long run average cost curve, statistical evidence seems to show that costs fall initially and then become more or less constant. In other words average costs do not rise in the long run. Bain³ and others say that average cost curves are shaped like the L.

3. *The effect of duplication of plant.* It has been argued that when a producer finds that expansion of scale will increase average costs, he will build another plant of the existing size instead of expanding the old plant. In Fig. 24, U_3 is on a higher level than U_2 . The wise producer will not travel along LRAC from R to A but will build two or more plants of size U_2 . If this view is correct, the curve LRAC stops at R; its rising upward arm does not exist.⁴

4. *Is the long run AC an envelope?* In Fig. 24, U_3 touches LRAC at A. But at this point LRAC is sloping upwards. Therefore the point A must be situated on the rising arm of U_3 and the firm is *not* operating at its optimum cost level which is the lowest point of U_3 . It is hard to reconcile this conclusion with the long run theory of value according to which the individual firm under perfect competition produces goods with the minimum average costs in the long run. Some writers therefore do not accept the view that the long run AC curve is an envelope of the short run AC curves.⁵

THE COST CURVE AND THE SUPPLY CURVE

The Cost Curve shows the cost of production of different quantities of output. The term cost may be used in various senses. So there

² Apol, *American Economic Review*, 1948; Scitovsky, *Welfare and Competition*, Ch. XIV.

³ Bain, *Barriers to Competition*; Wiles, *Price, Cost and Output*.

^{4,5} Wiles, *Ibid*.

are many kinds of cost curves, *e.g.*, marginal cost curve, average cost curve, fixed cost curve etc.

The Supply Curve is a curve of supply-prices. It shows how much supply will be forthcoming at different prices. Since the supply-price depends on cost of production, every supply curve is, in some sense, a cost curve. But every cost curve is *not* a supply curve.

The supply curve of an *individual firm* shows how much it will supply at different prices. The supply curve of an *industry* shows the total quantity which will be available, at different prices, from the firms included in the industry. The industry supply curve is obtained by aggregating the supply curves of the individual firms in an industry. (See below.)

Supply and Cost of Production. Supply depends upon cost of production. Cost influences supply in two ways : (i) it determines the volume of output which the firm concerned will find profitable to produce ; and (ii) it controls the number of firms engaged in production. If the cost of production of an article increases, without an equivalent increase of prices, production will fall because (i) each firm will stop manufacturing those units of output which yield no revenue and (ii) some firms will abandon production.

Thus the rise in costs will eliminate the marginal products and the marginal producers. To put the same thing in a different language it is cost of producing the marginal units or the cost of production of the marginal firms which controls supply.

THE INDIVIDUAL FIRM'S SUPPLY CURVE

Under pure competition, the most profitable output of a firm is that at which its marginal cost is equal to the price. In Fig. 25, SC is the marginal cost curve of a particular firm and OP is the market price. If the firm produces ON its marginal cost is less than the price by RR_1 . At this stage, expansion of production will give more profits. The firm has full control over its own output, so it will expand output, to earn more profits, as long as the price is higher than the marginal cost. When output is OM, the price is equal to marginal cost. At this point the firm will fix its output. If it produces more, say OV, it will incur losses amounting to WW_1 . Therefore it will not produce beyond

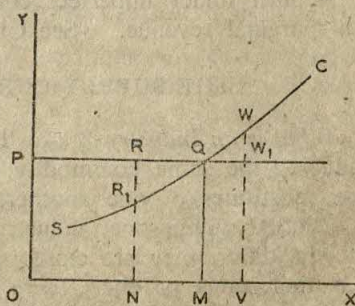


FIG. 25

OM. If the market price falls to NR_1 , it will restrict output to ON. If the market price rises to VW, it will expand output to OV. Thus we see that the individual firm under pure competition adjusts its output in such a way as to equalise its marginal cost to the price. It supplies only that quantity at which price = marginal cost. Hence, *under pure competition, the marginal cost curve of the individual firm is its supply curve.*

It is necessary to add the following qualifications to the above statement :

- (i) A part of the MC curve may be downward sloping, because this curve follows the AC curve which is ordinarily U-shaped. (See Fig. 23). The firm will not remain in the downward sloping part of the MC curve because at all points of this part *expansion* of output will *increase* profit. Hence, only the upward sloping part of the MC curve is the supply curve of the firm (as shown in Fig. 25).
- (ii) In the short run a firm may continue production if the price covers its variable costs only. But the firm shut down its plant if price falls below the variable costs. Hence, only that part of the MC curve *which is above the Shut Down Points* is the supply curve of the firm in the short run.
- (iii) In the long run the firm will be in production only if the price is sufficient to cover the total cost of production, including normal profits. No firm will continue production at a loss in the long run. Hence, the long run supply curve of the firm includes only that part of the MC curve which *is above the Break Even Point.*

Definitions of Break Even Point and Shut Down Point have been given under "Fixed Costs and Variable Costs". [See p. 133.]

A firm under imperfect competition equalises its marginal cost with marginal revenue. [See Ch. 12.]

THE SUPPLY CURVE OF AN INDUSTRY

What is an Industry? An 'Industry' is defined as a group of firms producing the same commodity or producing commodities which are close substitutes of one another. All producers of 'chocolates' may be included within one industry because, although the individual products differ, they are closely similar to one another. In the case of homogeneous products there is no difficulty because all firms produce identical commodities. The industry concept is a flexible one ; we can use it to include a wide range of products or a narrow range. Some writers are in favour of abandoning the concept, e.g., Triffin.

The output of an industry is the sum total of the outputs of the individual firms included within it. The output of an industry increases by the expansion of the outputs of the individual firms and/or the establishment of new firms. When considering output in the short run we must ignore the latter possibility because it takes time to establish a new production unit. Expansion of industry output by the entry of new firms can occur only in the long run.

The Short Run Supply Curve of an Industry. The shape of the Supply Curve of an industry (*i.e.*, the curve which shows how much output will be available at different prices) depends on the time taken into consideration.

In the short run the total supply can increase only by expansion of output by the individual firms. The marginal cost curve of the individual firm is its supply curve. Hence the short run supply curve of the industry as a whole is obtained by adding up the output figures of all the firms in the industry at each level of marginal cost. Suppose that when price is p_1 , the output of Firm A is x_1 , of Firm B, x_2 and so on up to x_n where n is the number of firms. Each firm has equalised its marginal cost to p_1 . Then at price p_1 , the total industry supply is $x_1 + x_2 + \dots + x_n$. In the industry supply curve, p_1 is to be marked on Y-axis; and on X-axis is to be shown $x_1 + x_2 + \dots + x_n$. It is to be noted that no firm will be producing any output below its Shut Down Point.

The short run average cost curve of a firm is U-shaped. The normal operating range of a firm is near about the capacity output, *i.e.*, approximately near the bottom of the U. Assuming this to be the position, a firm can increase output only at a higher average and marginal cost. In the short run the total output of an industry will increase only when higher prices are forthcoming to cover the higher costs of production. Therefore, the short run Supply Curve of an industry slopes upwards from left to right (as in Fig. 15).

The Long Run Supply Curve of an Industry. In the long run the individual firm constituting an industry can alter their equipment and scale according to the demand for the product. Also, there may occur a change in the number of firms. If the industry becomes more profitable, new firms will enter into it; in the converse case some of the existing firms may go out of production. The shape of the long run Supply Curve will depend upon the cost conditions that prevail after these adjustments are completed.

In some industries, *e.g.*, manufacturing industries, expansion of output will lead to various *external and internal economies*. The long run Supply Curve of such industries will slope downwards to the right. In some industries, *e.g.*, agriculture, there will be *diseconomies* when

output is expanded and the Supply Curve will slope upwards to the right as in the case of the short run supply curve. In some industries the economies and diseconomies may balance each other, thereby producing a Supply Curve which is parallel to the output-axis. (See 'Laws of Returns', p. 151).

LEAST COST FACTOR COMBINATIONS

The Production Function. The amount of output obtained by a firm during a particular time period depends on (i) its methods of production (technology) and (ii) the quantity of the factors of production used, that is, the inputs. So long as methods remain unchanged, output will vary with the quantity of inputs used. *The technical relationship between inputs used and the output obtained is called the Production Function.*

"The production function is the name for the relation between the physical inputs and the physical outputs of a firm. If a small factory produces 100 wooden chairs per eight-hour shift, then its production function consists of the minimum quantities of wood, glue, varnish, labor time, machine time, floor space, electricity, etc. that are required to produce the 100 chairs."—Watson.¹

"A production function must be specified for a period of time. It is a flow of inputs resulting in a flow of outputs during some period of time."²

The production function is assumed to be a continuous function, i.e., it is assumed that a change in any of the variable factors, however small, produces a corresponding change in the output. Production functions may be constructed for a particular firm or for the economy as a whole. Examples of the former type are $P = mC + nL + cZ$ or $P = F(C, L, Z \text{ etc.})$ where C and L are the amounts of capital, labour and the other factors.

An example of the latter type is the Cobb-Douglas Production Function, $P = kC^\alpha L^\beta$ where P is the aggregate output of the economy, C and L are the total amounts of Capital and Labour, and k, α and β are constants.

Suppose that a firm uses two variable inputs, L (labour) and M (a raw material) together with some fixed inputs (machinery). It finds that the output obtained (Q) equals $L \times M$. Then $Q = LM$, is the firm's production function. The firm will so arrange the amounts of L and M as to produce what it wants at the least possible cost of production. Alternatively, it can be said that the firm will spend its budget on the variable factors in such a way as to get the maximum possible output. The combination of factor inputs, which will secure such

¹ Watson, *Price Theory and its uses*, p. 159 (2nd Edition).

² *Ibid.*

objectives, is called the Least Cost Factor Combination. Obviously the relative proportion of the factors in the least cost factor combination will depend on (i) the form of the production function and (ii) the prices of the factors of production.

Certain general rules relating to least cost factor combinations are stated below.

Graphical Analysis of 2-factor Combinations. Two factors may be combined in many different ways to produce the same output. For example, with the production function $Q=LM$, 40 units of output can be produced with the following factor combinations : L-2, M-20 ; L-4, M-10 ; L-5, M-8 ; etc.

In Fig. 26, L is represented on OX and M on OY. If all combination of L and M producing output 40 (see above), are marked and joined we get the line I_1 . Such a line shows equal outputs with different factor combinations. The line is called an *Isoquant* or *Iso-Product Line* or *Equal-Product Line*. Again, all points showing factor combinations producing a different output (say 50), may be joined together. This will give us another isoquant, like I_2 . There may be any number of isoquants based on the same production function. The higher the position of the isoquant, the greater is the output level associated with it.

An isoquant must slope downwards from left to right because when one factor L is increased, the other factor M must be decreased, otherwise the total product obtained will not remain the same as before. Isoquants must also be convex to the origin because an increase in the use of one factor will reduce the marginal product of that factor and an increasing quantity of the other factor will be required to compensate for the loss. They are also called Production Indifference Curves.

The marginal product of a particular factor may be negative if the quantity used is too large. For example, if too much L (labour) is used there may be congestion and the efficiency of all the labourers may be affected. An isoquant will include points denoting such factor quantities because it includes *all* factor combinations producing the same output. But a rational producer will not operate on this part of the isoquant. The area of rational operation may be shown by

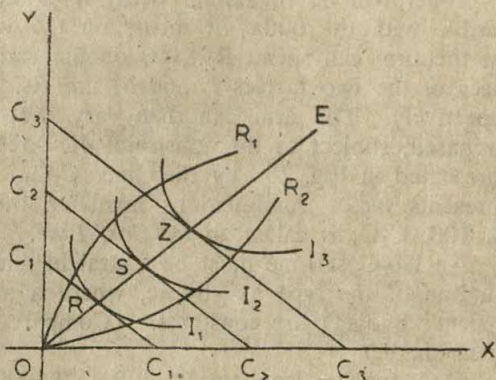


FIG. 26

drawing two lines from the origin enclosing only those parts of the isoquants where each factor has a positive marginal product. Such lines are called *Ridge Lines*, OR_1 and OR_2 . Negative marginal products appear in that part of the isoquant which has a positive slope. Ridge lines exclude these parts.

A firm will naturally try to reach the highest possible isoquant. Its profits will be maximum when it produces the greatest amount possible with the outlay it incurs on the variable factors. Suppose that the firm can spend Rs. 100 on the variable factors and that the prices of the two factors L and M are Rs. 4 and Rs. 5 per unit respectively. The firm can then vary the amounts of L and M purchased, subject to the constraint $4L+5M=100$. This equation is represented in Fig. 26 by the line C_1C_1 . Every point on C_1C_1 represents factor combinations involving the same expenditure, viz., Rs. 100. C_1C_1 is called an *Iso-Cost Line*.

An Iso-Cost Line must be a straight line because it represents an equation of the type $ax+by=c$, where a and b (factor prices) and c (firm's budget) are constants. (Compare the Price Line or Budget Line. Ch. 9.)

C_1C_1 touches isoquant I_1 at R. If the firm wants to produce 40 units of output, the best factor combination is that indicated by the point R. If the firm increases its outlay it will be on higher iso-cost lines like C_2C_2 or C_3C_3 . In each case, the *least cost combination (or the optimum position) is shown by the point of tangency between the iso-cost line and an isoquant*. A line joining the different points of tangency, R, S, Z, etc. shows the path along which the firm will move if its budget is successively increased. The line OE is called the *Expansion Path* of the firm.

A movement along an isoquant involves a change in the quantities of the factors used, without any change of output. Suppose that factor M is increased by a small quantity ΔM and, to be on the same isoquant, L is decreased by a small quantity ΔL . Then we can say that

ΔL has been substituted by ΔM . The ratio $-\frac{\Delta L}{\Delta M}$ is called the *Rate of Technical Substitution*.

$$RTS = -\frac{\Delta L}{\Delta M}$$

The RTS is shown by the slope of the tangent to the isoquant at the relevant point.

When one factor M is changed by a small quantity, keeping the other factor constant, the resulting change of output is called the marginal physical product of M. It has been proved that the point, where the iso-cost line touches an isoquant, shows the least cost

combination of factors on the budget represented by the iso-cost line. It can also be shown that at that point the following relationship must hold good :

$$\frac{\text{Marginal Physical Product of Factor L}}{\text{Marginal Physical Product of Factor M}} = \frac{\text{Price of L}}{\text{Price of M}}$$

The relationship follows from the Law of Equimarginal Returns, which applies to production also. (See p. 106).



LAWS OF RETURNS

The Laws of Returns deal with one aspect of the relationship between inputs and outputs, *viz.*, what happens to the quantity of *output* when one or more of the *inputs* are varied. To get more output it is necessary to use more inputs. But output *may or may not* increase in proportion to the increase of inputs.

There are three possible Laws of Returns.

(i) In some cases we find that output increases *less* than in proportion to the increase of inputs. The result is *increased costs*. Both average and marginal costs become greater. This is known as the Law of Diminishing Returns.

(ii) In some cases we find that output increases *more* than in proportion to the increase of inputs. The result is *reduced costs*. Both average and marginal costs become lower. This is known as the Law of Increasing Returns.

(iii) In some cases we find that output increases *exactly* in proportion to the increase of inputs. There is no change in the average and marginal costs of production. This is known as the Law of Constant Returns.

Shape. The shape of the Supply Curve will vary according to the law of returns to which the industry is subject. In the case of diminishing returns it will slope upwards from left to right ; in the case of increasing returns it will slope downwards from left to right ; and in the case of constant returns it will be a straight line parallel to the output-axis.

The circumstances under which each Law operates are described below.

LAW OF DIMINISHING RETURNS

Definition. Industries in which expansion of output leads to increased costs are said to be governed by the Law of Diminishing Returns. Agriculture, as pointed out by Ricardo, is the standard case of this type. When land is used more intensively with large amounts of labour and capital, the marginal returns diminish, *i.e.*, marginal costs increase.

The Law of Diminishing Returns states a technological relationship between the "inputs" on a particular production unit and the resulting "output". The term "input" means any factor of production used (or put in) for the purpose of getting a product. "Output" means the product obtained.

The case of Land : Suppose that a cultivator operates on a fixed plot of land and increases his input of labour, keeping all other factors and the method of cultivation unchanged. He will find that his output will not increase in proportion to his inputs. An example is given below.

Man-years of Labour	Total output (Total Returns) Quintals	Extra output added by the additional unit of labour (Marginal Returns) Quintals
0	0	0
1	50	50
2	80	30
3	100	20
4	110	10

The additional output obtained from the use of the last increment of an input is called the Marginal Returns. We find from the above example that the marginal returns are diminishing as the inputs of labour are increasing. The same results will follow if, instead of labour, any other input is increased under similar circumstances. This is called the Law of Diminishing Returns. The Law can be stated as follows : "If on a particular plot of land a farmer increases the input of a factor, without increasing the quantity of the other inputs and without changing the methods of cultivation, the marginal returns will diminish."

Qualifications and Limitations of the Law. The Law of Diminishing Returns is subject to the qualifications and limitations mentioned below.

1. *Constant technique.* The law does not apply if other things do not remain the same. For example, if the method of production is changed by the introduction of better quality inputs (e.g., better raw material, better implements or machinery) the marginal returns may increase for a time. But if increase of inputs goes on, the tendency towards diminishing returns will appear sooner or later.

2. *In case of land.* The law states the effects of increasing inputs on the same plot of land. If the size of the plot is increased the law will not apply. (The land used in cultivation is an "input" in the production process of agriculture. The Law of Diminishing Returns applies when one or more inputs are increased while other inputs are kept constant.)

3. *During the initial stages.* The law may not apply in the initial stages when a particular input is increased by very small quantities. If on a plot of land measuring 10 acres fertilizers worth Rs. 5 only are applied, the returns will be small. If in this situation the amount of fertilizers is doubled the output will probably be more than doubled. The Law of Diminishing Returns will operate only after a reasonable amount of every necessary input has been applied on the land. What is reasonable depends on the size of the land and the method of cultivation in use.

4. *Applies to the physical return.* The law refers to the quantity of production and not its market value. It is the marginal *physical* return which diminishes. The value of the produce depends on market conditions which may change from day to day.

Diagrammatic Illustration. The law of diminishing returns can be shown in the form of a diagram as follows :

Let OX represent units of a particular input and OY the corresponding marginal products. When OM units of input are applied the marginal product is MF. When OM_1 and OM_2 units are applied the marginal products are $M_1 P_1$ and $M_2 P_2$ respectively. A curve joining P, P_1 , P_2 etc., will have a shape like that of $R_1 R_2$ rising at first but falling ultimately.

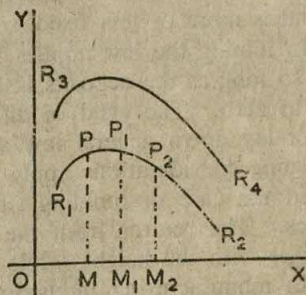


FIG. 27

If there is an improvement in the technique of production, the curve moves upwards (from $R_1 R_2$ to $R_3 R_4$) but the shape remains the same.

Proof of the Law of Diminishing Returns. It is said that the Law of Diminishing Returns has been derived from the actual experience of farmers. Samuelson says that the law, "is an important, often-observed economic and technical regularity".

The reasoning underlying the law is very simple. If a particular input (say labour) is increased without increasing the other inputs (say land and capital) then labour will be working with less and less land and capital per unit. The productive power of labour will obviously become less under the circumstances and diminishing returns will follow.

The law can be proved in another way.¹ Suppose that the law is *not true*. In that case it will follow that if on an acre of land, Rs. 100 worth of capital produces 50 quintals of rice, Rs. 200 worth

¹ See Boulding, *Economic Analysis*.

will produce at least 100 quintals, Rs. 400 will produce at least 200 quintals and so on *ad infinitum*. Under such circumstances it will be possible to produce from one acre of land enough rice to feed the whole world by sufficiently increasing the amount of investment. But such a thing is obviously absurd. We know that there is food-shortage in many countries of the world. It follows therefore, that marginal returns cannot increase proportionately or more than in proportion, except for short periods. Hence, marginal returns must be diminishing as the Law of Diminishing Returns states.

The Law of Diminishing Returns can also be deduced as a corollary from a more general law known as the Law of Variable Proportions. (See p. 136).

Where does the Law Apply? The law of diminishing returns applies in all cases where the supply of a factor of production is kept constant while the other factors increase. In agriculture the supply of land is more or less fixed, so the law applies.

In mining the law applies in particular cases. A mine is worked only so long as the deposits last. When they are exhausted the return falls to zero. The yield of different mines vary so much that we cannot lay down general law about any mining industry as a whole. The same considerations apply to fisheries.

In the case of building sites, it is generally agreed that the law applies. The returns from the upper storeys of a house gradually decrease with the height, while the costs of construction increase.

In manufacturing industries the law usually applies in the short period, i.e., when output is increased without increasing the fixed capital equipment.

Causes of diminishing returns. In the short run diminishing returns appear whenever a firm operates above capacity. The average cost curve is U-shaped. The bottom of the U is the point of least cost. When a firm produces more than the least cost output it is on the rising arm of the U and is operating under diminishing returns.

In the long run, diminishing returns may appear for any of the following reasons.

(i) *Scarcity of productive resources*: If increased supply of a particular article, essential to production, cannot be obtained, long run reorganisation of a firm will have to be based on a limited supply of that resource. Agriculture is based on land the supply of which is more or less fixed. Expansion of agricultural production involves the use of more capital and labour with relatively less land. Marginal returns therefore diminish. The principle applies to manufacturing industries when the supply of an essential item (e.g., a particular raw material or a particular machine) is scarce. Scarcity of productive

resources may be due to shortage of supply or to high costs of transfer from one use to another.

(ii) *Operation of the principle of variable proportions*: If the quantities or the proportions of the factors are altered, output and the cost of production will change. The Law of Variable Proportions gives us a simple rule about how the costs will vary. (See p. 136). The rule is that if all the factors are increased simultaneously and in suitable proportions the total output will generally increase more than proportionately and the cost of production will fall; but if one of the factors is kept constant while the others are increased, the output will not increase in proportion and hence the cost of production will increase.

(iii) *The cost of entry*: Starting a new production unit is not always easy. When new entry is difficult, increase in output must come from the existing firms who will be forced to go beyond the optimum size. This will increase both average costs and marginal costs.

❖ **The Law of Increasing Cost.** Diminishing returns naturally lead to increasing cost. Let us take the following arithmetical example illustrating the operation of the law of diminishing returns on a particular plot of land.

1st stage: initial expenditure	Rs. 100;	output 100 mds.
2nd " additional "	Rs. 10; addl.	" 8 "
3rd " " "	Rs. 10; "	" 6 "
Therefore in the 1st stage, average cost	$= \text{Rs. } \frac{100}{100}$	$= \text{Rs. } 1$
" " " 2nd " "	$= \text{Rs. } \frac{100+10}{100+8}$	$= \text{Rs. } 1.02$
" " " 3rd " "	$= \text{Rs. } \frac{100+10+10}{100+8+6}$	$= \text{Rs. } 1.05$
Also in the 2nd stage marginal cost	$= \text{Rs. } \frac{10}{8}$	$= \text{Rs. } 1.25$
" " " 3rd " "	$\text{Rs. } \frac{10}{6}$	$= \text{Rs. } 1.66$

Thus costs, both average and marginal are increasing. The Law of Diminishing Returns can also be called the Law of Increasing Cost.

LAW OF INCREASING RETURNS

When increase of output leads to a reduction in the cost of production, the law of increasing returns is said to operate. The causes of increasing returns may be summed up as follows:

(i) *The economies of large scale production*: In some industries (e.g., steel production) increase in the scale of production brings in various economies, external and internal, and the cost of production falls. (See p. 61).

(ii) *Availability of factor supplies* : If all necessary factors of production are easily available and the use of every factor can be increased in suitable proportions, the law of variable proportions applies and output increases usually more than in proportion. The cost of production naturally falls.

(iii) *Indivisibility of factors* : Certain productive resources cannot be divided into small units. Suppose that a bus, with a capacity of carrying 30 passengers, runs on a certain line. The passengers increase in number and a new bus is purchased. The cost of carrying the thirty-first passenger is large, but additional cost of carrying the thirty-second passenger is practically nil. Up to the sixtieth passenger the marginal cost and the average cost will be falling, i.e., increasing returns will be operating. Thereafter it will be necessary to purchase a new bus. So, for sometime after a new capital equipment is purchased, increasing returns will operate. This principle explains why the first part of the short-run cost curve slopes downward and the cost curve is shaped like a U or V.

LAW OF CONSTANT RETURNS

In some industries expansion of output produces no net economies or diseconomies and the cost of production remains the same. Such industries are said to be governed by the law of constant returns. Sometimes, expansion of output leads to economies in certain matters and diseconomies in others. If the economies and diseconomies exactly balance we get constant returns. In manufacturing industries the economies brought by expansion do not continue indefinitely. Sooner or later a firm reaches its optimum size beyond which it cannot grow without loss of efficiency. If, however, the industry is one where new firms can come in easily, and the technical structure of all firms is the same, increase of output will occur by increase in the number of firms and not by the expansion of individual firms. The total output will be produced by a large number of firms of optimum size operating at constant cost. This is the position in many small scale manufacturing industries like rice-milling or hosiery factories and in some cottage industries.

DIMINISHING RETURNS v. INCREASING RETURNS

Economists formerly believed that the industries of a country can be classified into types according to the Law of Returns operating in it. According to Marshall, industries dependent primarily upon nature (e.g., agriculture) are subject to the law of diminishing returns while industries dependent primarily on man's efforts (e.g., machine industries) are subject to the law of increasing returns. In the

majority of industries, however, nature and men have to work together and therefore there is a "straining of the tendencies towards increasing and diminishing returns against one another",¹ the final outcome being dependent on the relative parts played by the two factors in the industry concerned.

Modern writers criticise the above view on the ground that the Laws of Diminishing and Increasing Returns do not deal with the same set of facts. The law of diminishing returns deals with the case where some productive resources are increased, keeping others constant; while the law of increasing returns deals with the case where all the productive resources are increased simultaneously. The law of diminishing returns state the consequences of *incorrect factor proportions*. The law of increasing returns is concerned with *economies of scale*. The two laws are therefore, two distinct and different generalisations. They are not in any sense parallel to one another. Neither are they incompatible (i.e., *inconsistent*) with one another. They apply to two different situations.

RECOMMENDED READINGS

1. Cairncross, *Introduction to Economics*, Chs. 16, 18, 19.
2. Boulding, *Economic Analysis*, Chs. 20-22.
3. Stigler, *Theory of Price*, Chs. 7 and 8.
4. Stonier and Hague, *A Textbook of Economic Theory*, Chs. V and VI.
5. Samuelson, *Economics*, (9th edition), Chs. 23, 24, 27 Appendix.

EXERCISES

1. Define elasticity of supply. Give a diagram showing elasticity of supply, (a) equal to unity, (b) greater than unity, and (c) less than unity. (C.U. B.A., '65).
2. Explain the theory of opportunity costs. Under what conditions can it be valid? (C.U. B.A., '65).
3. Define clearly average total cost, average variable cost, and marginal cost. Prepare a table of average variable cost, marginal cost and average total cost, if fixed costs were Rs. 100, and average variable costs were constant at Rs. 10 per unit of output and give a graphical analysis. (C.U. B.A., '66).
4. Explain the concepts of (a) Fixed Cost and Variable Cost. (b) Marginal Cost and Average Cost. Why does Marginal Cost consist of variable cost only? (C.U. B.Com., '68).
5. "The least-cost optimum position of a firm is obtained where the equal-product curve touches, but does not cross, the lowest total cost contour". Discuss. (C.U. B.A. '72).

¹ Marshall, *Principles*, p. 319.

6. "There are no fixed costs in the long run. All costs are variable". Explain fully with examples. (C.U. B.A. '72).
7. Specify the relation between marginal cost and total cost. Illustrate your answer with a suitable numerical example. (C.U. B.Com. '74).
8. Explain the relation between supply curve of firms and the supply curve of the industry in a competitive market. (C.U. B.A., '69).
9. Explain the concepts, (a) shut-down points and (b) break even point. How are they related to an industry supply curve? (C.U. B.A., '65).
10. Examine the concept of cost as used in economic analysis. Why are all costs variable in the long run? (C.U. B.Com., '67).
11. Distinguish between fixed and variable cost. Will a firm produce any output if it cannot cover its variable costs? Give reasons for your answer. (C.U. B.A., '67).
12. What do you mean by a supply curve? How is it related to firm's costs in a competitive market? (C.U. B.A., '67; B.Com., '69).
13. Explain the Law of Increasing Returns, and analyse the causes of Increasing Returns. (C.U. B.Com., '68, '72).
14. How is market supply in the short and long periods determined? (Compare with C.A. Nov., '68).
15. "The laws of increasing and diminishing returns are often cited as if they were in some way parallel to one another. But they are quite distinct." Explain this statement. (C.U. B.A. '60, '64; Mysore B.Com., '68).
16. Explain the nature of short-run and long-run average cost curves of a firm. What is the relationship between these two types of cost curves? (C.U. B.A. '71).
17. Distinguish between the law of variable proportions and the law of returns to scale. Illustrate the operation of the law of variable proportions with the help of a diagram. (C.U. B.A., '71).
18. Explain the law of Diminishing Returns, and analyse its causes. (C.U. B.Com. '69).

CHAPTER 11

MARKET FORMS

MARKET

Definition. The term 'market' in Economics refers to a group of buyers and sellers exchanging a commodity. Benham¹ defines it as, "any area over which buyers and sellers are in such close touch with one another, either directly or through dealers, that the prices obtainable in one part of the market affect the prices paid in other parts." The result of such close touch is that one price prevails over the entire area. Therefore market is not a place. It means dealings in any product or factor of production between sellers and buyers.

Perfect Market and Imperfect Market. The market for a commodity is said to be Perfect when the following conditions are fulfilled :

(i) Each buyer and seller knows what the other buyers and sellers are doing.

(ii) Buyers and sellers are ready to deal with one another without discrimination.

(iii) Buyers and sellers are in such close contact with one another that transport costs can be neglected and only one price prevails.

(iv) The commodity bought and sold is homogeneous.

If any of the aforesaid conditions are not satisfied, the market is said to be Imperfect. (See p. 165).

MARKET FORMS

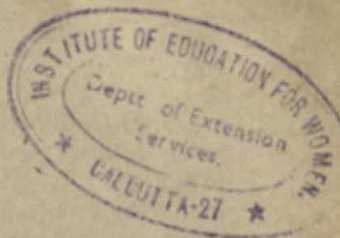
Market Morphology : Economists use certain terms to describe the various possible situations in which the pricing process takes place. Each of these situations is called a Market Form. Definitions of Market Forms are given below.

I. Pure Competition. Pure Competition exists when the following conditions are satisfied :

1. *Many Firms.* The number of sellers (and buyers) is so large that any one of them cannot influence the market price.

2. *Homogeneous Products.* The products of all the sellers are identical. There is no difference, whether real or fancied, between them.

¹ Benham, *Economics*, Ch. XII.



3. *Free Entry and Exit.* There is no obstacle, legal or otherwise, to the entry of new firms into the industry or the exit of any of the existing ones.

When economists use the term Pure Competition, they assume the existence of all the above conditions. In real life such conditions do not exist, except perhaps in the case of some agricultural commodities.

Under pure competition no producer, individually, is big enough to influence the market price. The price is unaffected by increase or decrease in output of any firm. It follows that the individual producer under pure competition can sell, at the market price, whatever he produces. This is what is meant by saying that the *demand for the individual firm's output, under pure competition, is perfectly elastic*. A line showing how much the individual firm, under pure competition, can sell at a particular price is horizontal and parallel to the output-axis. (Like PAR_1 in Fig. 28, p. 162).

II. Perfect Competition. The definition of Perfect Competition is wider than that of Pure Competition. Competition is said to be perfect when, in addition to the three conditions mentioned above (many firms, homogeneous products, free entry) *certain other conditions* are assumed to exist. The following additional conditions are usually assumed—perfect knowledge on the part of the buyers and sellers as to what is happening in the market; absence of discrimination of any sort between buyers and sellers; perfect mobility of the factors of production; and, such close touch between buyers and sellers that transport costs may be ignored.

The terms Pure Competition and Perfect Competition have been used differently by different writers. The views of Chamberlin² are as follows: "Pure Competition means competition unalloyed by monopoly elements. It is a much simpler and less exclusive concept than Perfect Competition, for the latter may be interpreted to involve perfection in many other respects than in the absence of monopoly, e.g., perfect mobility or perfect knowledge or such further perfection as the particular theorist finds convenient and useful to his problem."

According to Chamberlin, the sole requisite of pure competition is that nobody has any control over price. This involves—a large number of sellers and buyers; a homogeneous commodity; and absence of discrimination between sellers and buyers. According to Mrs. Robinson,³ Perfect Competition prevails, "when the demand for the output of each producer is perfectly elastic". This implies—a large number of buyers and sellers and a perfect market.

The term Perfect Competition is very often used in the same sense as Pure Competition. (Value—See Ch. 13).

² Chamberlin, *The Theory of Monopolistic Competition*, Chs. I and IX.

³ Mrs. Robinson, *Economics of Imperfect Competition*, Ch. I.

III. Imperfect Competition. Imperfect Competition is said to prevail when *any of the requisites of perfect competition is absent*. Imperfect competition is a very wide category and includes all market situations other than pure and perfect competition. The effect of imperfection is to make the demand for the firm's product less than perfectly elastic. According to R. F. Kahn, "Competition is imperfect if the demand for the Individual Firm's product is not perfectly elastic". (Like AR in Fig. 28, p. 163).

Samuelson⁴ says, "Imperfect competition prevails in an industry or group of industries wherever the individual sellers are imperfect competitors, facing their own *nonhorizontal* *dd* curves and thereby having some measure of control over price." (Value—See Ch. 14).

IV. Monopolistic Competition. This is a situation intermediate between Pure Competition and Pure Monopoly. Monopolistic Competition exists when there is a large group of firms producing commodities *similar to one another but not identical*. The term was invented by Chamberlin to express the idea that under certain market situations each producer is a sort of monopolist but between such monopolists there is competition. [Product Differentiation—See p. 167.]

Monopolistic Competition is a particular variety of imperfect competition. But monopolistic competition is near to the concept of Perfect Competition than the other varieties of imperfect competition because there are *many firms* in it. (Value—See Ch. 14).

V. Pure Monopoly. Pure Monopoly exists if there is only one seller with closed entry, producing goods for which there is no good substitute. Pure Monopoly implies complete control over supply and therefore the existence of super-normal profits. (See Chs. 7 and 14).

VI. Duopoly. Duopoly means control over supply by *two* firms. Duopoly is generally regarded as a special case of oligopoly. Kaldor calls it the "leading species of a large genus."

VII. Oligopoly. Where a few firms (more than one but not many) control the supply, oligopoly exists. In an oligopolistic situation each firm has to watch carefully the price and output policies of the other firms, and adjust its price and output policies accordingly. The essential characteristic of an oligopoly is, not 'fewness' of numbers, but the *consciousness on the part of each firm of the reactions of the rivals*. (Value—See Ch. 14).

Oligopolies may be divided into two classes :

(a) *Pure Oligopoly*—Where the products of all sellers are identical. *Examples*—Aluminium, Steel.

⁴ Samuelson, *Economics*.

(b) *Differentiated Oligopoly*—Where the products of the various sellers are similar but not identical. *Examples*—Cigarettes, Auto.

VIII. Monopsony. Monopsony is the converse of monopoly. It exists when there are *many sellers but only one buyer*. Buyer's monopolies are rarely found. Before World War II, American motor manufacturers, who were buyers of rubber, combined together to put pressure on Dutch rubber producers and were successful in reducing prices. During World War II, the British Government was the leading buyer of South American meat and the situation approached that of monopsony. In the labour market monopsony may exist when a particular kind of labour is used by one employer only. A monopsonist can exploit the seller just as a monopolist exploits the buyer.

The term **Duopsony** may be used to describe a situation where there are only *two buyers* but many sellers. Where we have *a few buyers* but many sellers, we may describe it as **Oligopsony**.

IX. Bilateral Monopoly. When in a market there is only *one seller* and only *one buyer*, it is called a Bilateral Monopoly. This situation is sometimes found in the labour market. The workers in an industry may be members of a single Trade Union which determines the terms under which labour is supplied. There may, on the other side, be a single employer, or all the employers may be organised in a single association which determines the terms under which labour is 'purchased', i.e., employed. Wages or the price of labour is, under this situation, determined by negotiation between the two monopolists, Employers' Association and the Trade Union. The process of negotiation in this case is called Collective Bargaining.

SOME DEFINITIONS

Total Revenue. Total Revenue means the total gross receipt of a firm. It equals price multiplied by the amount sold. Suppose that a firm sells 500 fountain pens at Rs. 10 each. The Total Revenue is $500 \times \text{Rs. } 10 = \text{Rs. } 5,000$. The general shape of the curve showing total revenue is shown in Fig. 29. (See p. 172.)

Average Revenue. Average Revenue means the average gross receipts per unit of product. In the above example, Average Revenue $= \text{Rs. } 5,000 \div 500 = \text{Rs. } 10 = \text{the price}$.

We can draw a curve showing the prices at which a *particular firm* can sell different amounts of output. Such a curve is called the *Demand Curve for the Firm's Product* or *Sales Curve* or *Demand as seen by the Seller or Producer*. It can also be called the *Average Revenue Curve* because every point on the curve shows the average revenue received by selling a particular amount of output. [This

Curve is not the same as the consumers' demand curve for a commodity which was discussed in p. 93.]

Under pure competition it is assumed that there are innumerable sellers and a particular seller supplies only a very small part of the demand. Therefore, increase in the output of a particular firm will be a negligible addition to the total supply and will not affect prices. *Under pure competition the individual firm can sell as much (or as little) as he likes at the current price.* Therefore, the average revenue curve is a straight line parallel to the X-

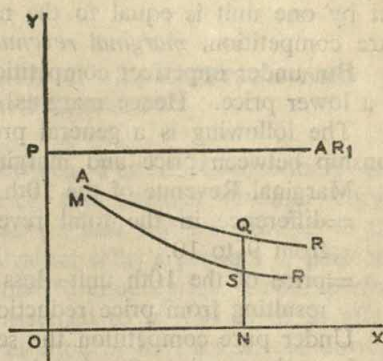


FIG. 28

axis. In Fig. 28, PAR_1 is the average revenue curve under pure competition when price is OP .

Under monopoly, monopolistic competition and any other variety of imperfect competition the average revenue curve will slope downwards from left to right (like AR in Fig. 28). The reason is that under imperfect competition each firm occupies a distinctive position in the market, either producing a substantial part of the total supply or producing a special quality or brand of output. In such cases the firm cannot sell more unless the price is reduced. Therefore AR will slope downwards from left to right.

Marginal Revenue. Marginal Revenue is the amount per unit by which a small change in the volume of sales will change total revenue or the gross receipts of the firm.

Suppose that the manufacturer of a patented article produces and sells 9 units at Rs. 10,000 each. If he produces 10 units he can sell all the ten only if the price is reduced. Suppose that 10 units can be sold at Rs. 9,500 each. Then,

$$\begin{aligned} \text{total revenue obtained from 9 units} &= \text{Rs. } 90,000 \\ \text{and " " " " 10 " } &= \text{Rs. } 95,000 \\ \therefore \text{ difference in the total revenue} & \\ \text{between selling 10 units and 9 units} &= \text{Rs. } 5,000 \end{aligned}$$

In the above example, the manufacturer by increasing output by one unit increases his total receipts by Rs. 5,000 and not Rs. 9,500 which is the price per unit at the higher level of production. Rs. 5,000 is the marginal revenue.

Under conditions of pure competition an individual seller can sell whatever he produces, at the market price. If he produces an addi-

tional unit he will get the same price as before. Therefore in his case the change in the total revenue brought about by increasing output by one unit is equal to the market price. It follows that under pure competition, *marginal revenue=price=average revenue*.

But under imperfect competition a higher output can only be sold at a lower price. Hence marginal revenue is always *less than price*.

The following is a general proof of the rules regarding the relationship between price and marginal revenue.

Marginal Revenue of the 10th unit of output

= difference in the total revenue caused by increase of output from 9 to 10.

= price of the 10th unit—loss of revenue of the previous 9 units resulting from price reduction.

Under pure competition the second item above (*i.e.*, loss of revenue from the previous 9 units) is zero, for by hypothesis the individual firm cannot affect price. Therefore, *marginal revenue=price*. Under imperfect competition the second item is not zero. Therefore marginal revenue is less than price. If we draw a curve showing the marginal revenue at each level of output of a firm under imperfect competition, it will be below the average revenue curve at all points (like MR in Fig. 28). The vertical distance between the AR curve and the MR curve depends upon the elasticity of demand at the point under consideration.

Marginal Revenue, Price and Elasticity of Demand. Suppose that x units of a commodity can be sold at price p and $x+x_1$ units at a price $p-p_1$ where x_1 and p_1 are very small quantities. Then Marginal Revenue (mr)

$$= \frac{\text{Increase in total revenue}}{\text{Increase in sales}} = \frac{(x+x_1) \times (p-p_1) - xp}{x_1}$$

$$= \frac{xp + x_1p - xp_1 - x_1p_1 - xp}{x_1} = p - \frac{xp_1}{x_1} - p_1$$

$$\therefore \frac{mr}{p} = 1 - \frac{x}{x_1} \times \frac{p_1}{p} - \frac{p_1}{p}$$

Since p_1 is a small quantity p_1/p can be neglected. And,

$$\frac{x p_1}{x_1 p} = 1 \div \left(\frac{x_1}{x} \div \frac{p_1}{p} \right) = \frac{1}{e} \text{ where } e \text{ is the elasticity of demand.}$$

It follows that, $mr = p \left(1 - \frac{1}{e} \right)$. The marginal revenue depends

upon the price and the elasticity of demand. In the diagram (Fig. 28) the firm can sell output ON at price NQ. At this level of output the

marginal revenue is NS. Between NQ and NS the following relationship holds good : $NS=NQ \left(1-\frac{1}{e}\right)$.

DIFFERENCE BETWEEN PERFECT COMPETITION AND IMPERFECT COMPETITION

1. The principal difference between Perfect Competition and Imperfect Competition is in the shape of the average revenue curve. Under perfect competition the average revenue curve is parallel to the output-axis ; the demand for the individual seller's product is perfectly elastic ; and, average revenue=marginal revenue=price. Under perfect competition the individual seller is assumed to be too small to affect the price. He can sell as much or as little as he likes at the current price. For him price is a parameter according to which he must adjust his output. He is a "price-taker" and a "quantity-adjuster".

2. Under imperfect competition the individual firm has some influence over price. The influence may come from limitation in the number of sellers, product differentiation, or any other cause. The individual seller is not a "price-taker" but a "price-maker". He cannot increase his sales without reducing the price or giving some extra service to the buyer. Under imperfect competition the Sales Curve or the Average Revenue Curve slopes downwards from left to right and the marginal revenue is always less than the average revenue. The marginal revenue curve lies below the average revenue curve. [See Fig. 28].

3. Under imperfect competition there is a gap between average revenue and marginal revenue. The extent of the gap is shown by the vertical distance between the average revenue curve and the marginal revenue curve at each point. This distance is large in some cases and small in others, depending upon the degree of imperfection in the market. The degree of divergence between the average revenue and the marginal revenue can be used as a measure of the degree of imperfection in the market.

HOW IMPERFECT COMPETITION ARISES

Competition is imperfect when the conditions essential for perfect competition are not fulfilled. Competition may become imperfect due to any of the following reasons :

1. Reduction in the number of the sellers to one, two or a few. (Monopoly, Duopoly or Oligopoly).
2. Reduction in the number of the buyers to one, two or a few. (Monopsony, Duopsony or Oligopsony).

3. Product differentiation, *i.e.*, separation of similar goods into different products by the use of trade marks, patents and brands. (Monopolistic Competition).

4. Discrimination between buyers and sellers; lack of perfect knowledge on the part of buyers and sellers; great distance between different buyers and different sellers, etc.

The conditions assumed for perfect competition are very rarely fulfilled. In actual life we find imperfect competition. But there are different degrees of imperfection. Monopolies and monopsonies are cases of extreme imperfection. Monopolistic Competition comes nearest to perfect competition because under it there is competition between a large number of sellers producing goods similar to one another though not absolutely identical.

MEASUREMENT OF MONOPOLY POWER

Economists believe that monopoly power of a seller is measurable. In spite of its many difficulties it is very useful to both economists and policy makers. Different methods of measuring monopoly are summarised below.

I. The degree of monopoly power. Lerner has suggested that the ratio $\frac{p-m}{p}$ (where p =price, and m =marginal cost) may be used

to measure the monopoly power of an enterprise. Under perfect competition, price must equal marginal cost (except in the very short period). Under imperfect competition, the individual seller has control over supply and can charge a price which is greater than the marginal cost. The greater the control over price, the greater is the difference between price and marginal cost. The ratio between the excess (of price over marginal cost) and the price, measures the extent of the seller's control over the market, *i.e.*, the degree of monopoly power.

Samuelson says that in an imperfect competition the consumer goes on getting too little of the product and paying too high a price. "The moral: It is the contrived divergence between P and MC that constitutes the true additional burden of monopoly."

It has been shown above that $mr=p \left(1 - \frac{1}{e}\right)$. From this equation it follows that $\frac{p-mr}{p} = \frac{1}{e}$. It will be shown later that at equilibrium,

marginal revenue=marginal cost. Therefore, $\frac{p-m}{p} = \frac{1}{e}$. Thus the degree of monopoly power is equal to the inverse of the elasticity of demand.

It has been said that Lerner's method has many difficulties. It cannot measure non-price competition, product differentiation, monopolistic competition and differentiated oligopoly.

II. The concentration ratio. A concentration ratio shows the fraction of total market sales controlled by the largest group of sellers. Bain⁵ suggests that the share of total industry sales of the largest four or eight firms will indicate the degree concentration.

III. Profits. The Government or some proper authority may examine the quantity of profits. If profits remain 'high', it is indirect evidence of monopoly power.

IV. Cross Elasticity of Demand. Cross elasticity of demand can be used as a measure finding out the proportionate change in quantity demanded of a product as a result of a proportionate change in the price of another product. (See p. 105). This method was suggested by Kaldor and Robert Triffin. This method is not used because is very difficult to find out the necessary statistics.

PURE COMPETITION, MONOPOLY AND MONOPOLISTIC COMPETITION

Competition is said to be pure when there are many buyers and sellers dealing with a homogeneous commodity in a market where entry is free. When there is only one seller producing something for which there is no substitute and there are physical or legal obstacles to the entry of new firms, the situation is called Pure Monopoly. When there are many buyers and many sellers, with free entry, but the product is *not* homogeneous we have Monopolistic Competition.

Product Differentiation. Pure Monopoly is rare. Pure competition is also rare. Even when there are many buyers and sellers an element of monopoly is introduced if the products of the different sellers are marketed under different trade marks, brands or names. The use of such devices to separate the products of each seller is called Product Differentiation. The effect of product differentiation is to give to each seller a special position of a monopolistic character. Pure competition requires uniformity of product, *i.e.*, every unit of the commodity concerned must be substitutable for every other unit. This condition is violated if commodities come to the market under different trade names or with different goodwill. People may prefer X brand tea to Y brand not because there is a difference in the quality but because the producer of X has created a good name for it by advertisement and other processes. Under such circumstances it is possible for the producer of X to charge a higher price which will yield extra profits of a monopolis-

⁵ Bain, *Barriers to Competition*.

tic character. If X and Y were freely substitutable this would not have been possible.

In actual life we find neither pure monopoly nor pure competition but a 'blend' of the two. The term monopolistic competition has been invented to describe this situation.

The distinction between the three concepts, Pure Competition, Monopoly and Monopolistic Competition can be summarised as follows :

<i>Pure Competition</i>	<i>Monopolistic Competition</i>	<i>Pure Monopoly</i>
1. Exists possibly in the case of some agricultural products only.	Exists in most industries.	Is very rare.
2. Many sellers of identical products.	Many sellers of nearly similar products.	Only one seller.
3. The individual firm has no control over the price.	The individual firm has some control over the price.	Absolute control over price.
4. Advertisement and salesmanship not necessary.	Advertisement and salesmanship very important.	Advertisement and salesmanship necessary only for maintaining good public relations.
5. The optimum output is that at which the marginal cost is equal to price.	The optimum output is that at which the marginal cost (including selling cost) is equal to the marginal revenue.	The optimum output is that at which the marginal cost is equal to the marginal revenue. Selling cost is unimportant.
6. The demand curve for the individual firm's product is parallel to the output-axis.	The demand curve for the individual firm's product slopes downwards from left to right.	The demand curve for the individual firm's product slopes downwards from left to right.

Case of Oligopoly : In Oligopoly we find features 3 to 6 listed above under Monopolistic Competition. As regards items 1 and 2, Oligopoly is less common than Monopolistic Competition and in this market form we find a small number of firms—more than one but not many.

PRICE COMPETITION AND SERVICE COMPETITION

Sellers compete against one another by reduction of prices. But under monopolistic competition a price reduction may not have much effect. When a consumer is accustomed to use a particular brand of goods a fall in the prices of other brands will not have much effect unless the fall is considerable. Also, manufacturers do not like cutting prices because it may lead to a general fall of prices of all similar goods thus "spoiling the market" for all manufacturers.

Nowadays competition frequently takes place through (i) improvement of the quality of the product and (ii) provision of additional services (like free air in petrol stations, gift coupons etc.). Such competition is called service-competition.

Sometimes in retail shops a particular commodity is deliberately sold below cost or given free in order to attract customers for the other goods in the shop. For example, before the World War II many stationery shops in Calcutta used to sell snuff at a loss as a matter of policy. Such practices arise wherever competition is keen. The commodity which is sold at a loss or given free is called the "Loss-Leader."

EVILS OF IMPERFECT COMPETITION

Imperfect competition produces certain evils for the society. The principal forms of imperfect competition are monopoly, oligopoly and monopolistic competition. The evils of each are enumerated below.

1. **Monopoly.** In monopoly there is restriction of output, high prices, exploitation of labour and other harmful features. The monopolist squeezes money out of consumers. Inequality of income and wealth is increased. Monopoly output is less than competitive output. Hence, consumers get less of the commodity than they want. Under competitive conditions, the commodity would have been produced in larger quantities and more resources would have been devoted to its production. Hence under monopoly there is an improper allocation of the community's resources.

2. **Oligopoly.** All the evils of monopoly like high price, low output, exploitation of labour etc., are also found in oligopoly. There is, in addition, another harmful feature. Oligopolies spend considerable sums of money in competitive advertisements. This expenditure is almost entirely a waste from the social standpoint.

3. **Monopolistic Competition.** The principal evil of monopolistic competition is improper allocation of resources. A firm under monopolistic competition produces below capacity. It keeps an excess capacity in reserve. Hence a certain amount of productive resources is kept idle. This is wasteful from the social standpoint. Also, under monopolistic competition as in oligopoly, there is much wasteful advertisement.

Chamberlin, however, observes that product differentiation, which is the characteristic feature of monopolistic competition, gives variety to the consumer. Resources may be wasted, but the consumer gets more satisfaction.

Conclusion. From the economic standpoint perfect competition is the ideal market form. Under it prices are equal to marginal costs. This ensures optimum allocation of resources. Under perfect competition consumers get the maximum quantity of goods and services.

from the origin (O) if fixed costs are zero. In Fig. 29, it starts from Z. OZ is the fixed cost which must be incurred even when output is zero.

The net revenue of a firm is the difference between the total revenue

and the total cost of production. Therefore, the net revenue at any level of output is given by the gap between the two curves OR and ZE. Thus if output is OM_1 total revenue is M_1T_1 , total cost is M_1C_1 and net revenue is $M_1T_1 - M_1C_1 = C_1T_1$.

On the line M_1T_1 we may mark a point Q_1 in such a way that $M_1Q_1 = C_1T_1 =$ net revenue with output OM_1 . The locus of Q_1 will trace out a curve showing the net revenue at every level of output. In the

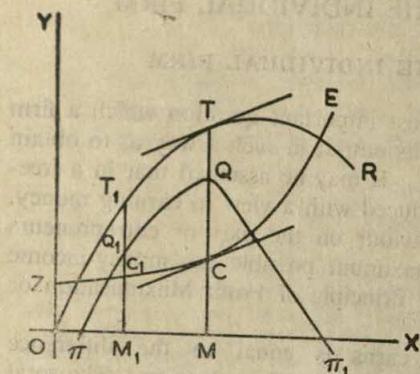


FIG. 29

diagram above π_1 is the locus of Q_1 . We can call it the net revenue curve.

In the Theory of the Firm it is assumed that the firm will seek to maximise its net revenue. Therefore it will fix output at the point where the gap between OR and ZE is greatest. In Fig. 29, this output is OM. At this output total revenue is MT, total cost is MC and the net revenue is CT which is equal to MQ. Obviously the line MT will pass through the highest point of π_1 which is Q. It can be shown that the tangents to OR and ZE at the points T and C respectively are parallel to each other. In other words TR and TC have the same slopes at T and C respectively.

Thus we see that from the Total Revenue and the Total Cost Curve of the firm it is possible to find out the output which gives the maximum net revenue or the best profit output.

2. From Marginal Revenue and Marginal Cost Curves.

The net revenue of a firm is maximum at a level of output where, Marginal Revenue = Marginal Cost. This is proved below.

Marginal revenue means the addition to the total revenue obtained by selling one more unit of output. Marginal cost means the addition to the total cost when one more unit is produced. So long as the marginal revenue is greater than the marginal cost, the net revenue is increased by expanding production. Therefore, the firm will expand production up to the point at which the marginal revenue equals marginal cost. At this point the net revenue is maximum. Beyond this point, the marginal cost is greater than the marginal

revenue and therefore, production beyond this point involves a diminution of the net revenue. (See pp. 163-65).

In Fig. 30, AC is the average cost curve and MC is the marginal cost curve. AR and MR are the average and the marginal revenue curves respectively. MR and MC intersect at Q. The corresponding output is OM. When output is less than OM, marginal revenue exceeds marginal cost and the firm gains by expanding output. Following the Principle of Profit Maximisation, the firm will increase output. The gap between MR and MC remains up to M and therefore output will be increased up to OM. But if more than OM is produced MC exceeds MR and there is loss. Hence output will not be expanded beyond OM. At OM output, net profits are maximised.

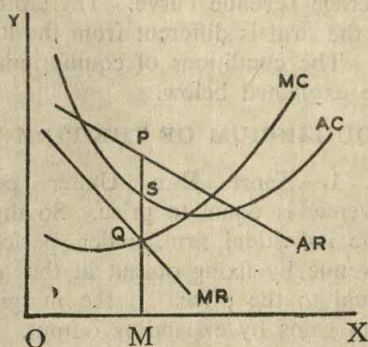


FIG. 30

Both the monopolist and the competitive producers aim at maximising their net gain. The net gain of the individual firm is maximised when $mr=mc$. The formula is applicable to the monopolist and also to the competitive producer. Between the two cases the difference is that under pure competition the average revenue curve is horizontal while under monopoly it is downward sloping. This difference produces certain important effects. (See next two sections.)

Best-Profit Output and Equilibrium. A firm is in equilibrium when it has no tendency to change its output. At equilibrium, the revenue-maximisation formula, marginal revenue=marginal cost must hold good. But the equality of marginal revenue and marginal cost is not the sole condition of equilibrium. Certain other conditions must also be satisfied before a firm can be in equilibrium. (See p. 176).

Time and Equilibrium. In the short run a firm cannot change its equipment and the other fixed factors. In the long run it can. The long run costs of production (average costs and marginal costs) are different from the short run costs. Therefore, the output which maximises net revenue in the short run is not necessarily the same as the output which maximises net revenue in the long run. Again, in the short run there can be no entry or exit of firms. In the long run new firms can enter the industry group and some of the old firms

may choose to go out of production. In either of these events, the total output of the industry or group will change. Change in the total output will change the price and the position (or shape) of the average revenue curve. Therefore the short-run equilibrium position of the firm is different from the long-run equilibrium position.

The conditions of equilibrium of a firm under different situations are explained below.

EQUILIBRIUM OF THE FIRM UNDER PERFECT COMPETITION

1. Short Run. Under perfect competition the marginal revenue is equal to price. So the formula $mr=mc$ becomes $p=mc$. The individual firm, under perfect competition, maximises its net revenue by fixing output at the point where the marginal cost is equal to the price. If the marginal cost is less than the price, the firm gains by expanding output. If the marginal cost is higher than the price, the firm incurs losses and must reduce its marginal cost by reducing output. If it cannot do so, it must abandon production.

Under perfect competition, the individual firm cannot influence the price. It must take the average revenue curve for granted and adjust its output according to its marginal cost curve.

The short run equilibrium position of a firm under perfect competition is illustrated in Fig. 31.

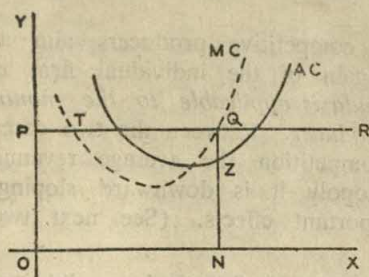


FIG. 31

OP=Price.

PR=Average Revenue Curve.

AC=Average Cost Curve.

MC=Marginal Cost Curve.

When output is ON the marginal cost is the same as the price. Therefore, the firm will produce ON and sell it at price OP ($=NQ$).

In the case illustrated above, the firm's average cost ($=NZ$) is less than the price ($=NQ$). Therefore, the firm is earning excess profits ($=QZ$ per unit). In the long run there will be *new entry* and the excess profits will be competed away.

A diagram may be constructed in such a way as to make OZ negative. Such a diagram will illustrate the case where a firm is losing in the short run. In such cases the long period adjustment will take place by the *exit* of firms.

The result of 'bad times'. In the long run the total revenue of the firm must cover *both variable costs and fixed costs*. In the short run, however, a firm may continue to produce if its *variable costs* are

covered. This happens during 'bad times' if the firm expects that the situation will improve in the future. Rather than closing down the business, which will involve greater loss, the firm may carry on for some time at a small loss. This may be regarded as a method of minimising the loss. (Shut Down Point—See p. 133 and p. 192).

2. Long Run. In the long run, the total revenue of the firm must equal its total cost of production. (By definition, "total cost" includes normal profits). If the total revenue is *greater* than the total cost, the firm is making excess profits. Whenever there is excess profit, new firms will be attracted into the industry, the total output of the industry will increase and the price will fall. The process will go on until the whole of the excess profit is wiped away. If the total revenue is *less* than the total cost, the process will be reversed. There will occur exit of firms, reduction in the total output, and rise of prices. Finally at equilibrium, *the total revenue must equal total cost*.

When total revenue equals total cost, the average revenue (or price) must equal average cost. This follows from the definition of the terms.

Let 'q' be the output, 'p' the price and 'a' the average cost.

Then, total revenue = pq and total cost = aq .

At equilibrium, $pq = aq$. $\therefore p = a$.

For equilibrium, another condition also must be satisfied, viz., the marginal revenue (or price) must equal the marginal cost. This is a general condition which determines at what level of output the net revenue is maximised.

For long run equilibrium under perfect competition we thus get two necessary conditions :

Price = Marginal Cost

Price = Average Cost

or, Price = Average Cost = Marginal Cost.

The long run equilibrium position of a firm under perfect competition is illustrated in Fig. 32.

OP = Price.

PR = Average Revenue Curve.

AC = Average Cost Curve.

MC = Marginal Cost Curve.

ON = The equilibrium output.

When ON is the output, the price ($= OP = QN$) = marginal cost (QN) = average cost (QN). Thus all the conditions are satisfied.

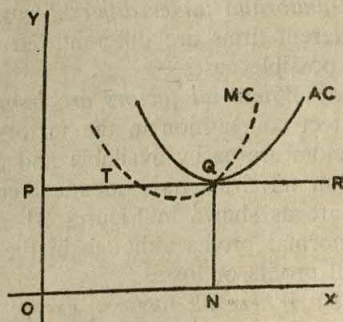


FIG. 32

The minimum average cost. The price line PR is the average revenue curve of the firm. At equilibrium in the long run the average revenue curve is a tangent to the average cost curve (otherwise there cannot be equality between price, average cost and marginal cost). Since PR is a horizontal line and AC is U-shaped, PR can be tangent to AC only at the lowest point of the latter. This means that *in the long run under perfect competition the individual firm produces at the least possible average cost.*

Other conditions. Certain other conditions must also be fulfilled before a firm is in equilibrium. They are stated below.

1. In Figures 31 and 32, it will be observed that the marginal cost curve cuts the marginal revenue curve at two points, viz., T and Q. At both these points, $mr=mc$. But, the output indicated by the first point T is *not* an equilibrium output because when output is increased beyond PT the marginal cost is reduced and the total revenue increases. T shows the point of *minimum* net revenue and not the *maximum* net revenue. From this we can come to the conclusion that at the point of equilibrium the marginal cost curve must cut the marginal revenue curve from below i.e., the relative position of the two curves must be such that to the left of the equilibrium point marginal cost is *less* than marginal revenue, and to the right of the equilibrium point marginal cost is *greater* than marginal revenue.

2. At equilibrium in the long run the firm must be earning not only the maximum possible profits but also *normal profit*, i.e., such profit as is considered to be reasonable and usual in that line of business. If *less* than normal profit is earned some firms will go out of the industry. If *more* than normal profit is earned some new firms will enter into the industry. In either case there will be changes in price and output. Hence, at equilibrium in the long run each firm must be earning normal profit. This condition is fulfilled when the average cost curve of each firm in the industry is a tangent to its average revenue curve.

Equilibrium under different cost conditions. The cost conditions of different firms are different. It is possible to distinguish between three possible cases—

(a) *Where all factors are homogeneous.* This means that there is perfect competition in the factors' market, all factors are identical, all factors are easily available and factor prices are constant. In this situation all firms have identical cost curves. The equilibrium positions are as shown in Figures 31 and 32. In the long run all firms earn normal profits although in the short run there may be super-normal profits or losses.

(b) *Where all factors, except entrepreneurs, are homogeneous.* This means that the entrepreneurs have different capacity (are 'heterogeneous') while all other factors are homogeneous. In this situa-

tion different firms have different cost curves. Some firms earn more than others, even in the long run. Earnings which are due to the superior ability of a particular entrepreneur cannot be competed away, even in the long run. They are analogous to rent.

(c) *Where all factors are heterogeneous.* In this case the earnings of the different firms differ to a greater extent. Some firms earn supernormal profits.

EQUILIBRIUM OF THE FIRM UNDER IMPERFECT COMPETITION

1. **Short Run.** Under imperfect competition the average revenue curve of a firm slopes downwards from left to right. [Reason—the existence of imperfections makes it impossible for the firm to sell an increased output without reducing prices. (See pp. 163-65.)] The marginal revenue is less than price and therefore the marginal revenue curve lies below the average revenue curve. For the individual firm, maximum net revenue is earned at the level of output, where marginal revenue = marginal cost.

The equilibrium of the individual firm in the short run under imperfect competition is illustrated in Fig. 33.

AR = average revenue curve

MR = marginal revenue curve

AC = average cost curve

MC = marginal cost curve

MR and MC intersect at Q

∴ ON = Equilibrium Output
and PN = Price.

Assuming AC to include normal profits, the firm in Fig. 33 is earning excess profits amounting to $ON \times PN$ — $ON \times NR = ON \times PR$.

If MR and MC intersect at a point below AC, the firm incurs losses. In this case $ON \times PN$ will be less than $ON \times NR$. In

the short run, the individual firm may be making excess profits or suffering losses.

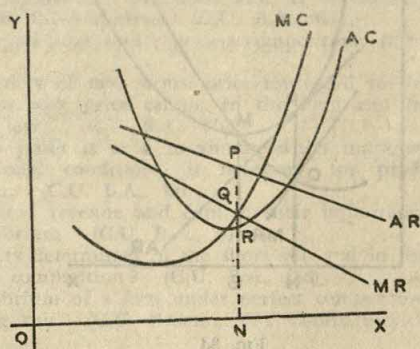


FIG. 33

2. **Long Run.** In the long run the average cost of production of a firm cannot exceed the price. If it does, the firm will stop production. On the other hand, if the average cost of production is less than price, the firm earns excess profits. If there are obstacles to the entry of new firms into the industry, such excess profits will continue even in the long run and the firm will be in equilibrium in a posi-

tion like the one shown in Fig. 33. This is the situation in monopoly which is a variety of imperfect competition.

If there are no obstacles to new entries, excess profits will attract new firms into the industry. The output of the new firms will increase the total output of the industry. Hence the price will fall and the average revenue curve will be shifted downwards. New entries will continue so long as price is greater than average cost. They will stop when price equals average cost.

In the converse case, *i.e.*, when in an industry the average cost is higher than the price, some of the firms will go out of production. The exit of firms will reduce total output and raise prices. The average revenue curve will be shifted upwards. The exit of firms will continue until price is equal to average cost.

Thus we find that through the process of new entries and exit, equilibrium will be reached in the long run. At equilibrium, price will equal the average cost of production.

Thus position of long run equilibrium of the firm under imperfect competition is shown in Fig. 34. AC and MC are the

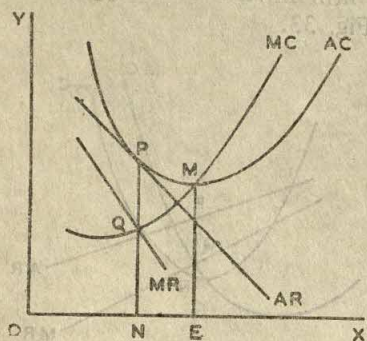


FIG. 34

average and the marginal cost curves. AR and MR show the average and the marginal revenues. When output is ON, average cost = NP = price, and marginal cost = NQ = marginal revenue. The average revenue is equal to the average cost only at the point where AR just touches AC *i.e.*, where the average revenue curve is a tangent to the average cost curve.

Under imperfect competition the average revenue curve slopes downwards from left to right and the average cost

curve is U-shaped. Hence the average revenue curve can be a tangent to the average cost curve only to the left of the lowest point of the latter (left of M in the figure).

Thus under imperfect competition, even in the long run, the firm does not produce at its minimum cost of production. Its actual average cost is PN, while the minimum cost is ME. [Under perfect competition the firm, in the long run, produces at its minimum cost. As the average revenue curve under perfect competition is horizontal, it can be a tangent to the average cost curve at the lowest point of the latter.]

There is another significant difference between the equilibrium positions of firms under perfect and imperfect competition. The output OE, corresponding to the lowest point of AC, is commonly defined as the "capacity" of the firm. Under perfect competition at long run equilibrium the firm's output equals OE, the capacity output. Under imperfect competition at long run equilibrium, the firm's output is less than OE. (In Fig. 34, the firm's output is ON which is $< OE$.) Under imperfect competition, therefore, the firm always has Excess Capacity.

RECOMMENDED READINGS

1. Samuelson, *Economics*, (9th Edition), Ch. 25.
2. Stonier & Hague, *A Text Book of Economic Theory*, Ch. V.
3. Henderson & Quandt, *Microeconomic Theory*, Ch. 3.
4. Baumol, *Economic Dynamics*, Ch. 5.
5. Robinson, *Economics of Imperfect Competition*, Ch. 7.

EXERCISES

1. Both the monopolist and the competitive producers aim at maximising their net gains. Show how they achieve this objective. (C.U. B.A., '64)
2. Show why marginal cost will equal price under perfect competition. (C.U. B.Com., '64).
3. "If there is free competitive entry of new firms, price must fall to the level of minimum average cost." Show why price cannot in the long run be lower or higher than this equilibrium level. (C.U. B.A., '66).
4. Is it true to say that a firm's profit is at a maximum when marginal cost = marginal revenue? State additional conditions, if necessary, for profit maximisation, and explain your answer. (C.U. B.A., '66).
5. Define marginal cost and marginal revenue and explain their importance in the determination of a firm's equilibrium. (C.U. B.A., '67).
6. How is the price of a commodity determined in the short run and in the long run under conditions of perfect competition? (C.U. B.A., '68).
7. Discuss the conditions of equilibrium of a firm under perfect competition both in the short run, as well as long run. (C.U. B.Com., '68; Compare with C.A., May '68, Nov. '71).
8. Why do demand and marginal revenue curves for the individual firm coincide under pure competition? What do you know about the total revenue curve of such a firm? (C.U. B.A., '72).
9. Why is the equality of marginal revenue and marginal cost essential for profit maximisation in all types of markets? Explain why price can be substituted for marginal revenue in the $MR=MC$ rule when an industry is purely competitive. (C.U. B.A., '73).
10. Discuss the relation between price, marginal cost and average cost in a perfectly competitive market both in the short and in the long run. (C.U. B.Com., '73).
11. Explain how price can be determined under monopolistic competition, (i) in the short run and (ii) in the long run. (C.U. B.Com., '74).

CHAPTER 13

THEORY OF VALUE UNDER PERFECT COMPETITION

VALUE AND PRICE

In colloquial language, Value means moral worth, utility and many other things. But in Economics, the word is used to mean the *rate of exchange between one commodity and another*. If we find that 1 kg. of sugar can be exchanged for 4 kg. of potatoes, we say that the value of 1 kg. of sugar is 4 kg. of potatoes.

The exchange of goods for goods has become obsolete nowadays. In modern times, goods are bought and sold in the market for money. The exchange value of an article, in terms of money, is called Price.

DEMAND, SUPPLY AND VALUE

In a sales transaction there are two parties—the buyer and the seller. The price, at which a thing is sold, is determined by agreement between the buyer and the seller. Naturally, both parties have an influence on price. It can therefore be said that value is determined by buyers and sellers, *i.e.*, by Demand and Supply. The influence of demand and supply on value can be analysed as follows.

Demand. Demand is governed by the Law of Demand which states that as price rises the quantity purchased falls and as price falls the quantity purchased increases. At any particular price, a particular buyer will buy a definite quantity of a commodity the

amount of which will depend on the marginal utility of the commodity to him at the time. If the marginal utility of a commodity to a man is worth Rs. 5, he will purchase one unit if the price is Rs. 5. If the price is more than Rs. 5 he will not purchase any. If the price is less than Rs. 5 he may purchase more than one unit. Thus every man has a demand schedule which indicates how much of a commodity he will buy at different prices. By combining the

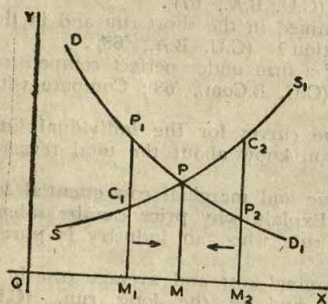


FIG. 35

demand schedules of all individuals in the market we get the market

demand schedule which indicates how much of the commodity will be sold in the market at different prices. The market demand schedule when represented in the form of a graph is called the Demand Curve. DD_1 in Fig. 35 shows the usual shape of the Demand Curve. It slopes downwards to the right because as price falls, the total quantity purchased in the market increases. Every point on the demand curve shows the total quantity purchased at that price. It also indicates the marginal utility obtained. Thus DD_1 in Fig. 35 shows that :

At price P_1M_1	the total purchase is OM_1	and marginal utility is P_1M_1
" PM	" OM	" PM
" P_2M_2	" OM_2	" P_2M_2

Supply. The amount of output which a firm can supply depends on the marginal cost of production. The price must cover the marginal cost otherwise no supply will be forthcoming. The marginal cost curve of a firm shows how much the firm will produce at any particular price. The total supply in an industry is equal to the sum of the outputs of every firm in it. Hence, the Supply Curve of an industry is obtained by adding up the amounts that each firm produces at a particular price and plotting the sum against the price. The industry supply curve thus shows two things: (i) the amount supplied at a particular price, and (ii) the marginal cost of producing it.

The marginal costs of the individual firms will be identical where the factors of production are homogeneous and perfect competition prevails in the factors' market. In other cases the marginal costs will differ and the Industry Supply Curve will show the marginal cost of the marginal firm.

In the very short period, the price in the market may not cover even the marginal cost of production. In the case of perishable goods, the sellers have to dispose of their stock before the goods perish, whatever be the price in the market.

The Equation of Demand and Supply. The price of a commodity in the market tends to reach a level at which the amount demanded is equal to the amount supplied. This level is shown by P . When price is PM , the amount demanded and the amount supplied are both equal to OM . The price of the commodity will normally be PM . When the price diverges from PM , the forces of demand and supply will tend to bring it back to PM . Suppose that price is P_1M_1 . At this price, buyers demand only OM_1 but the sellers are prepared to sell much more than OM_1 . There is *excess supply* which brings the price down. Again suppose that the price is P_2M_2 . At this price the buyers are prepared to buy OM_2 . But the sellers will offer to sell much less than this. Hence there is

excess demand which will push the price up. At price PM , there is neither excess demand nor excess supply. Hence the price will normally be steady at this level. There is *equilibrium* between demand and supply at price PM .

("The equilibrium price, i.e., the only price that can last, is that at which the amount *willingly supplied* and amount *willingly demanded* are equal. Competitive equilibrium must be at the intersection point of supply and demand curves."—Samuelson.¹)

The equilibrium price, such as PM in Fig. 35, may only be a *temporary equilibrium price*. The price of potatoes on a day in the market may equate demand and supply on that day, but on the next day the price may be different. This will happen if the price on any day is such that the producers find it advantageous to supply more of the commodity or less of it than before. When output or supply changes, the price will tend to change.

Thus the price which equates demand and supply in a very short period of time is not the same as that which equates demand and supply over a longer period of time. Hence the theory of value or price determination must be discussed differently for different periods of time.

VALUE IN THE VERY SHORT PERIOD UNDER PERFECT COMPETITION

Very short period. The very short period is defined as one in which the supply is more or less fixed. A day in the fish market is a very short period because the supply which has been brought into the market must ordinarily be sold within the day, otherwise it will be spoilt. In such cases value is determined primarily by demand. The equilibrium price is that price at which the entire supply is sold. If the demand is high the price will be high, if the demand is low, the price will be low. The equilibrium price in the very short period is called the *Market Price*. Market price coincides with marginal utility but not always with the marginal cost of production, i.e., ac and mc may be $< p$.

Market equilibrium is illustrated in Fig. 36. If OM is the quantity of a commodity available, the straight line MS perpendicular

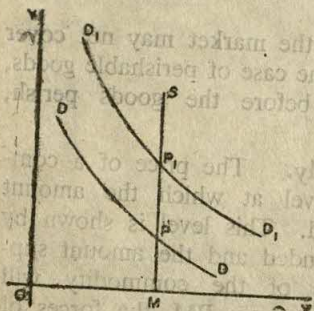


FIG. 36

¹ Samuelson, *Economics*, p. 63.

to the X-axis shows the conditions of supply (whatever the price, only OM is available for sale). The point at which this line cuts the demand curve DD is the equilibrium price (PM in the diagram). If the demand curve moves upward (to D_1D_1 for example) the equilibrium price will be MP_1 . Value in the very short period is determined by the available supply and the demand. Obviously, demand is more important in this case.

VALUE OF NON-REPRODUCIBLE ARTICLES

The value of non-reproducible articles (like pictures by a dead painter) is determined in the same way as values in the very short period market. The supply of a non-reproducible article is fixed. Its supply curve is a line like MS in Fig. 36. The point, at which the supply curve intersects the demand curve, determines the price of such an article.

VALUE IN THE SHORT PERIOD UNDER PERFECT COMPETITION

Short run or short period. The Short Run or the Short Period is defined as one which is not long enough to enable the producers to alter their fixed equipment and size of plant. The amount produced in the short run depends on the existing scale of plant and equipment. Increase of output with the existing equipment generally means increased marginal costs, because ordinarily all producers operate their plants at the level where cost is minimum. The short run supply curve of most commodities is therefore a line moving upwards like SS_1 in Fig. 35.

Equilibrium price. The equilibrium price in the short run is given by the point of intersection between the demand curve and the short run supply curve. The equilibrium price in the short run is called the *short run normal price*.

For the individual firm the condition of equilibrium in the short run is $p=mc$ or *price=marginal cost*. If a firm's output is such that its marginal cost is less than price, it gains by expanding output. On the other hand if its marginal cost is greater than price, it is losing and must reduce its output. It will therefore fix its output at the level where $p=mc$. This is the firm's best profit output.

For all firms in an industry in the short run the price must equal marginal cost. But the average cost of production may be greater or less than the price. In the former case the firms are suffering losses and in the latter case making excessive profits. In either case there will occur changes in the number of firms in the industry. In the long run, losses and excess profits will disappear.

If in the short period demand is low and the price is lower than average costs, producers will lose money and curtail production. But,

by definition, the short period is too short to alter fixed equipment. If a producer stops production his income falls to zero. For a time therefore, the producers may carry on production if the variable costs are covered. In the long run, however, the price must be high enough to cover both variable costs and fixed costs, otherwise production will be abandoned. (See Shut Down Point, p. 192).

VALUE IN THE LONG PERIOD UNDER PERFECT COMPETITION

Long period or long run. The Long Period or the Long Run is defined as one which is sufficiently long to enable producers to change their equipment and scale of production in any desired way. In the long run there is assumed to be *perfect adjustment* of production to demand.

The conditions of the equilibrium. Under perfect competition many firms are engaged in producing an identical commodity. All the firms together constitute the Industry. In the long run, under perfect competition, the industry tends to reach a position in which there is no tendency towards any change in the *number and size of the individual firms, their total output and the price in the market*. When this is the situation, the industry is said to be at equilibrium. The long run value of a commodity is determined when the industry producing it is at equilibrium. The question, how value is determined in the long run, is therefore answered by finding out what are the conditions necessary for *long run equilibrium of an industry*.

Let us suppose that SS_1 (in Fig. 35) is the long run industry supply curve of a commodity and that DD_1 is its Demand Curve. We find that the two curves intersect at the point P. This is the point of equilibrium. At this point marginal utility is equal to marginal cost and the quantity demanded is equal to the quantity supplied. *Under conditions of perfect competition and in the long run, the value of the commodity will tend to reach this point and remain there.* This proposition can be proved as follows.

Proof. Suppose that for some reason output stops at OM_1 . In this situation buyers are willing to pay M_1P_1 but marginal cost is only M_1C_1 . The producers are making excessive profits. The natural tendency (under perfect competition) will be to expand production. There will be increased production from the existing firms and also entry of new firms. So M_1 will tend to move towards the right (as shown by the arrowhead). Again suppose that for some reason production has gone up to OM_2 . Now the buyers are willing to pay only M_2P_2 while marginal cost is M_2C_2 . Producers lose money and naturally curtail production. Some firms go out of business. M_2 therefore tends to move to the left (as shown by the arrowhead).

But at output OM there is neither loss nor excessive profits. So there is no tendency either to expand or curtail production. This is the point of stable equilibrium. The output OM is called the Equilibrium Output and the price PM is called the Equilibrium Price or the Normal Price. Also, at this point marginal utility is equal to marginal cost.

MU and MC must equal P. Also $AC=P$. Thus we have found one important condition for long run equilibrium, viz., *marginal utility must equal marginal cost and both must equal price*. There is, however, another important condition. *In the long run, price must also equal the average cost*. The reason for it is as follows. In the long run the total cost of production of a firm (including normal profits) must be equal to its total revenue. If the total cost of a firm is greater than its total revenue, it incurs losses and will be forced to stop production. The exit of some firms will reduce total output. The price will rise until it covers the average cost of the remaining firms. In the converse case, if the total revenue of a firm is larger than its total costs (including normal profits) it will tend to expand production for the purpose of earning more profits. Also, new firms will be attracted into the industry. Entry of new firms and the expansion of old firms will increase total output. The price will fall until it equals average costs, so that all excess profits are wiped away. There can be no stability of price and output unless, *for each firm in the industry*, the total revenue is equal to total costs. Since total revenue is equal to price $\times$ output, and total cost is equal to average cost $\times$ output, total revenue will equal total cost when price is equal to average cost. Thus the second condition for long run equilibrium is that *price must equal average cost*.

Summary. Under perfect competition the long run value of a commodity is determined when the industry producing it is in equilibrium and the industry is in equilibrium when the following conditions are satisfied :

(i) $\text{marginal utility} = \text{price} = \text{marginal cost}$

(ii) $\text{price} = \text{average cost}$

or, $\text{marginal utility} = \text{price} = \text{marginal cost} = \text{average cost}$.

The individual firm in the long run under perfect competition will determine its output in such a way as to equalise *both* its average and marginal cost with the price. This is its best profit output. Since the average cost curve is U-shaped, marginal cost equals average cost only at the lowest point of the average cost curve. (See p. 142). Hence the individual firm in the long run under perfect competition produces its output at *the minimum average cost*.

In Fig. 35, SS_1 is upward sloping and shows the cost conditions of an industry operating under diminishing returns. The shape of

SS_1 will be downward sloping under increasing returns and horizontal under constant returns. In these cases also, the Demand Curve and the Supply Curve will intersect at a point. Subject to certain qualifications in the case of increasing returns, the point of intersection between the Demand Curve and the Supply Curve is the point of equilibrium under increasing returns and constant returns. The proof is similar to the one given above.

Assumptions and Qualifications. There are certain assumption and qualifications implied in the theory of value outlined above.

1. It is assumed that *there is perfect competition* (many firms, homogeneous commodity, free entry). The equality between average cost and price is brought about by free entry and exit of firms. The equality between marginal cost and price is brought about by the operation of profit motive and competition.

2. The theory *applies only in the long run*, i.e., when sufficient time has been given for the adjustment of supply to demand. Each of the output-levels OM_1 OM and OM_2 (in Fig. 35) requires a particular level of equipment and organisation. It takes time to change from one level to another.

3. It is assumed that there is *no change in the price-cost structure* of other industries. The theory deals with the equilibrium of a *particular* industry, assuming that all other prices are constant.

4. The theory is not, strictly speaking, applicable to industries *operating under increasing returns*.

LONG RUN VALUE UNDER CONSTANT RETURNS

In an industry operating under Constant Returns, the average

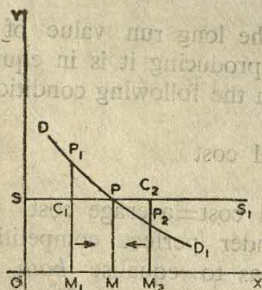


Fig. 37

LONG RUN VALUE UNDER INCREASING RETURNS

In an industry operating under Increasing Returns, expansion of output leads to economies and both average costs and marginal costs are reduced. The industry supply curve slopes downwards from left to right.

In Fig. 38, SS_1 is the supply curve of an industry under increasing returns. It intersects with the demand curve DD_1 at P . In this diagram the shape of SS_1 and its position in relation to DD_1 are such that P is a point of stable equilibrium. At all points to the left of M (such as M_1) there is *excess demand* (demand greater than supply) which pushes output up. At all points to the right of M (such as M_2) there is *excess supply* (supply greater than demand) which pushes output down. At P , there is neither excess demand nor excess supply. Hence, PM is the equilibrium price and OM is the equilibrium output of the industry.

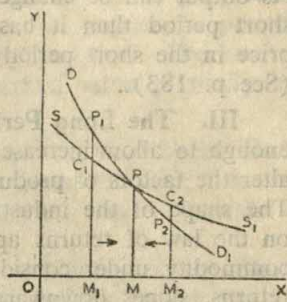


FIG. 38

Multiple equilibrium. Under increasing returns the supply curve slopes downwards from left to right. The demand curve also, slopes downwards from left to right. It is therefore possible for the two curves to intersect at two or more points. Hence there may, in theory, be more than one point of equilibrium under increasing returns.

Increasing returns cannot co-exist. The main problem, in connection with the theory of value under increasing returns, is *whether perfect competition and increasing returns can co-exist*. When the law of increasing returns is operating, any of the firms can secure economies by expanding the scale of production. The resulting reduction in costs will enable such firms to undersell the other firms. In such an event there will arise either monopoly or oligopoly. *Perfect competition will cease to exist*. This result is inevitable if costs can be reduced continuously by expanding the scale of production. For this reason it has been said that *increasing returns are incompatible with perfect competition and stable equilibrium*. (See also Ch. 15 under "Representative Firm".)

IMPORTANCE OF TIME IN THE THEORY OF VALUE

Value is determined by demand and supply but the relative influence exerted by them on value, varies with the period of time taken into consideration. Marshall showed that there are four fundamental time-periods in valuation. They are as follows:

I. The Very Short Period. If the time under consideration is very short, the supply is more or less fixed (e.g., a perishable article, like fish, which has been brought to the market on a certain day and must be sold). In such cases value is determined primarily by demand. The equilibrium price in the very short period is called *Market Price*. (See p. 182).

II. The Short Period. In the short period, output can be changed but the fixed equipment and scale of plant cannot be changed. As output can be changed, supply has more influence on value in the short period than it has in the very short period. The equilibrium price in the short period is called the *short period normal value*. (See p. 183).

III. The Long Period. If the time under consideration is large enough to allow increase or decrease of the fixed equipment (*i.e.*, to alter the factors of production) we get what is called the long period. The shape of the industry supply curve in the long period depends on the law of returns applicable to the production conditions of the commodity under consideration. It rises upwards under diminishing returns, slopes downwards under increasing returns and moves horizontally under constant returns. In all cases the point of equilibrium is the point at which the demand curve and the supply curve intersect. The equilibrium price in the long period is called the *long period normal price* or the *normal value*. (See p. 184).

IV. The Very Long Period. The very long period is one in which increased or decreased demand for capital equipment leads to changes in their supply and cost conditions. There is time to alter the "factors of production of the factors of production" of a commodity. Increased or reduced costs of capital equipment change the shape of the supply curve. The demand curve also may change owing to changes in habits or taste. Variations in value brought about by such wide changes are called by Marshall, "Secular changes in value". The very long period is essentially of a historical category.

General Conclusions. Regarding the time element in value theory the following points are to be noted :

1. The distinction between the different time-periods is not based on clock-time, but on what Stigler calls "operational time" *i.e.*, the time required to alter supply by adjusting the fixed equipment to the conditions of demand. This will be obvious from the following summary of the time periods :

- (i) Very short period—Fixed supply.
- (ii) Short period—Supply variable within the limits of the existing capital equipment.
- (iii) Long period—Sufficient time to alter the capital equipment and other factors of production.
- (iv) Very long period—Sufficient time to alter the factors of production of the factors of production.

2. The operational time is different for different industries. The short period for a motor car factory is perhaps one or two years, but for a fruit garden it is perhaps 15 years.

3. There is no statistical relationship between the prices of the different periods. Normal price is not the average of market prices.

4. The longer the period of time under consideration, the greater is the influence of cost of production on value; the shorter the period, the greater is the influence of demand or utility on value. The market price is primarily determined by demand, normal value primarily by cost of production.

A Criticism. Difficulties in the Concept of the Short Run. Marshall's classification of time periods has been criticised on the ground of *vagueness*. The following arguments are advanced in support of this criticism.

(i) There are certain difficulties in the definition of the Short Run. A firm uses many kinds of equipment, some of which can be changed quickly and others after a long time. The Short Run must not be defined in terms of the time taken to change a particular equipment but in terms of the scale of production as a whole. But this makes it difficult to determine the length of the Short Run with exactness.

(ii) The Short Run is generally defined in terms of the time taken to *increase* the scale of production. But it may also be defined in terms of the time taken to *reduce* the scale of production. Either type of change may be required to adjust supply to demand. But the two time periods are not necessarily the same. For example, the time required to increase capacity from 400 units to 600 is not the same as the time required to reduce capacity from 600 units to 400. It has therefore been observed that, "the short period is not the same length at both ends."¹

NORMAL VALUE AND MARKET VALUE

Market Value or Market Price is the price that prevails in the very short period. The supply in such a period is assumed to be unalterable but this assumption applies only in the case of extremely perishable commodities like milk or fish. Even in this case if the price is too low the suppliers will consume the commodities themselves rather than sell. In most cases market price is influenced not only by the existing stocks but also by possible future supplies, *i.e.*, the cost of producing further units in the future.

Normal value is of two types, the short period normal value and the long period normal value. Both are determined at the point of equilibrium between marginal utility and marginal cost. But in the former case marginal costs are determined by the existing equipment and organisation while in the latter they are determined after reorganisation of the scale of production.

¹Robertson, *Lectures on Economic Principles*, Vol. I, p. 143.

Normal value is the result of the economic forces operating on supply and demand. But before the result is finally achieved new forces might come into existence tending to drive value to a different normal. In a dynamic society therefore, normal value is a moving target, towards which, market value tends to approach but may never actually reach. Normal value is not a statistical average of market values. Market value is the temporary result of existing economic forces. Normal value is the final result which will emerge if the existing economic forces operate undisturbed.

COST OF PRODUCTION AND VALUE UNDER PERFECT COMPETITION

Value is determined by demand and supply. Demand is determined by utility or consumer preferences; supply is determined by cost of production. Hence, cost of production is one of the factors which determine value.

The importance of cost of production, in the determination of value, varies with the time taken into account and the nature of the market (whether perfect or imperfect). The influence of cost of production on value *under perfect competition* can be analysed under the following heads:

I. Very Short Period. In the very short period the supply is more or less fixed. If the whole supply *has to be sold* within the period, the price will depend entirely on demand. When supply is fixed, the supply curve is a straight line perpendicular to the output-axis like MS in Fig. 36. (See p. 182). The price is determined at the point where MS intersects the demand curve DD. At price PM, the entire supply is sold, but PM may be higher or lower than the cost of production. Thus cost of production has *no* direct influence on price in the very short period.

II. Short Period. The short period is defined as one in which the equipment and plant of the individual firm is fixed. In this situation the firm maximises its net revenue by producing that output which makes the firm's marginal cost equal to price. So long as the marginal cost is less than price, it is profitable to expand production because from every increment of output the firm gets a positive increment of profit. The firm will not increase output to a point where the marginal cost is greater than price because there will be loss if it does so. Hence net revenue is maximum at the point where marginal cost=price. In the short period therefore, price tends to equal the marginal cost of production.

III. Long Period. In the long period the firms have time to alter their fixed capital and equipment and thereby adjust supply to the conditions of demand. Hence, price must equal not only the

marginal cost of production but also the average cost of production. (See p. 184.)

PRIME COSTS, SUPPLEMENTARY COSTS AND VALUE

Prime Costs or Variable Costs are those costs which vary with the amount of output, e.g., cost of raw materials, wages of casual labour, costs of transportation etc. Supplementary Costs or Fixed Costs are those costs which do not change for small changes of output e.g., depreciation of machinery, salary of the permanent staff etc. These are also known as Overhead Costs.

In the long period the firms have time to alter their fixed capital and equipment. When such an alteration is made, the fixed cost becomes different. Hence, *all costs are variable in the long run*. The distinction between Prime Cost and Supplementary Cost is relevant only to the short period.

The concept of prime cost enables us to set a *downward limit* to the fall of prices in the short period. If for some reason demand falls and the price obtained does not cover total costs, the producers are faced with the problem whether to stop production or continue at a loss. Stoppage of production will mean total loss. So producers may for a time, sell at a price which covers prime cost and a part of the supplementary costs. They may even sell at a price which just covers the prime cost. This will occur specially when the reduced demand is expected to be temporary. Rather than disband the organisation and spoil machinery by non-use, producers will carry on when only the prime cost is recovered. But if the price offered is below the prime cost, there will be no production. So in the short run price may go down to the level of prime cost but not below it.

In the long run, however, the price must be high enough to cover total costs. If it is not so, the machinery and organisation will be diverted to other uses or abandoned. Supply will fall, counteracting the tendency towards fall of prices, until a new equilibrium is reached between demand and supply. In the short run producers are primarily concerned with recovering the prime costs or the variable costs. Fixed costs or the overhead costs are relatively unimportant. In the long run, however, the overhead costs also must be recovered if production is to be continued. Therefore, it is said that overhead costs are true costs only in the long run. "True Costs" are the items in total cost which *determine prices*.

The short period fall of prices to the level of prime costs will not occur where the producers are afraid of "spoiling the market" or of incurring unpopularity with other producers.

BREAK EVEN POINT AND SHUT DOWN POINT

The Break Even Point is the point on the supply curve (or the marginal cost curve) of a firm at which the price obtained just covers the total cost of production, including normal profits. In the short run, a firm may be below the break even point. It has been shown above that a firm may in the short run go on producing if it gets back only its prime costs. In the long run it cannot do so. Therefore in the long run a firm must be at its break even point *or above*. A position above the break even point shows excess profits. There may be excess profits, even in the long run, if there are obstacles to entry. If there is free entry into the industry *no* firm can in the long run be above the break even point, because excess profits will be competed away by new entries.

The point on the supply curve of a firm, at which the price obtained is just equal to the prime cost, is called the Shut Down Point. If the price falls below this point, the firm is forced to close down. (See p. 133).

INTERDEPENDENCE OF VALUE, UTILITY AND COST

Value is determined by both demand and supply. It is inaccurate to say that demand (or utility) alone determines value or that supply (or cost of production) alone determines value. The two together determine value just as both the blades of a pair of scissors are required for cutting a piece of cloth.

Under perfect competition, value, utility and the cost of production are mutually related. Utility and cost of production influence value. When an article has a high utility or a high cost of production, its value tends to be high. But value also influences cost of production and utility. If for any reason the price of a commodity rises, its output will increase (except in rare cases like non-reproducible articles). Increase of output will lead to changes in the organisation of production and the cost of production will change. Also, when a larger quantity of an article is available, its marginal utility will fall. Thus the value of an article has an influence on cost of production and marginal utility. Therefore, *utility, cost and value are interdependent*.

Marshall used a simile to show the interdependence of utility, cost and value. The three quantities are like three marbles placed on a dish. The position of each depends on those of the other two. So value, utility and cost determine one another and are themselves determined by the general conditions of demand and supply.

CHANGE OF DEMAND

Meaning of Change of Demand. "Change of Demand" means a change in the shape or the position of the Demand Curve.

Increase of Demand—Demand is said to increase when the consumers are willing to purchase more at the same price or are willing to pay more for purchasing the same quantity as before.

Fall of Demand—Demand is said to fall when consumers purchase less at the same price or pay less for purchasing the same quantity as before.

Changes in demand (increase or fall) are indicated diagrammatically by *shifting the demand curve to a new position*, and *not* by changing positions on the same demand curve.

In Fig. 39, AB is the original demand curve. According to this curve, when price is PM the demand is OM; when price falls to QN, people buy more (ON). This is *not* a change of demand because people are acting according to the old demand curve. If however, there occurs a change in the consumers' preference for the commodity so that they are prepared to pay RM for OM

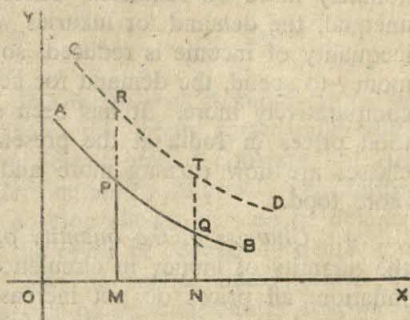


FIG. 39

units and TN for ON units, we can say that there has occurred an increase of demand. The line joining R, T, and similar other points is the new demand curve (CD in this case).

When demand increases, the demand curve is shifted upwards (AB to CD in Fig. 39). When demand falls, the demand curve is shifted downwards (CD to AB in Fig. 39).

Causes of Change in Demand. The demand for a commodity or service may change for any of the reasons enumerated below.

1. *Changes of habit, taste and fashion*: Human desires are to a large extent determined by habit, taste and the prevailing fashions. All these things change in course of time. The taste for particular articles may change as a result of the spread of education and an improvement in the standard of living. Thus in India we find that the demand for books and newspapers by the average man is increasing. In the case of some articles, demand is determined by fashion and fashion changes frequently.

2. *Innovations*: New products and new styles are constantly being invented. They cause a fall in the demand for old products. Thus, the demand for cotton textiles has been affected by the discovery of synthetic products.

3. *Changes in income*: Income is one of the determinants of consumption. When a man's income increases, he buys more goods.

Thus when the level of income in a country rises (as a result of economic development etc.) the demand for some goods increases considerably. For example, the demand for better type of clothing increases when people become more prosperous. The demand for inferior goods usually falls. These effects are produced by changes in the *real income*. A change in the *money income only* may not affect demand, except indirectly through the psychological effects that it may produce. A change in the *distribution of income* as between different classes in a country, can also influence demand. The richer classes spend proportionately more on luxuries. Therefore, if distribution becomes more unequal, the demand for luxuries will increase. On the other hand if inequality of income is reduced, so that the poorer classes have more money to spend, the demand for necessities and comforts will increase comparatively more. It has been suggested that one cause of higher food prices in India at the present time is that the Indian working classes are now earning more and are therefore able to consume more food.

4. *Changes in the quantity of money* : Increase or decrease in the quantity of money in circulation may affect demand. In times of inflation, all prices do not increase in the same proportion. Therefore the demand for some products may increase or decrease relatively more than the demand for other products.

5. *Changes in population* : When population increases, the aggregate demand increases. In India the rapid growth of population in recent times has led to an increase in the demand for foodstuffs. The influx of refugees had the same effect. Sometimes the *age composition* of the population of a country may change. During World War II, a large number of young men were killed. After the War, in U.K. and Germany, there were relatively more old men. Therefore there was relatively greater demand for goods and services used by old men.

6. *Changes in the prices of other goods* : The demand for a commodity is influenced by the prices of its substitutes and complements. An increase in the price of fish leads to greater demand for meat. An increase in the price of sugar will reduce the demand for tea.

7. *Future expectations* : When businessmen and producers expect better trading conditions *i.e.*, greater sales, they buy more goods, including raw materials and implements. Hence the demand for such goods increases. Consumers also buy more if they expect prices to rise. The reverse effects are produced if a fall of prices or worse trading conditions are expected.

8. *Taxation* : The tax policy of the Government may affect demand. For example, higher taxation of tobacco may lead to a decline of the smoking habit and a reduced demand for cigarettes.

Effects of Changes in Demand. The effects of changes in demand are shown diagrammatically in Figs. 40, 41 and 42.

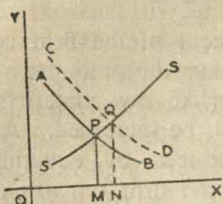


FIG. 40

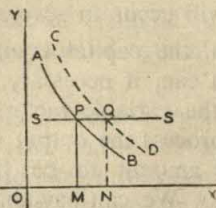


FIG. 41

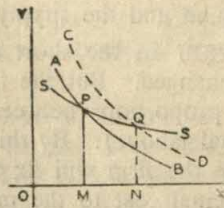


FIG. 42

AB is the old demand curve, CD is the new demand curve and SS is the supply curve. Fig. 40 shows the supply curve under diminishing returns; Fig. 41 the supply curve under constant returns; and Fig. 42 the supply curve under increasing returns. The shifting of the demand curve to a higher position shows increase of demand. From the diagrams it is clear that the effect of changes in demand on price and output depends on the law of return under which the industry is operating. The effects can be summarised as follows:—

- (i) Short Run Effects—[Fig. 40] Diminishing Returns. When demand increases from AB to CD, price increases from PM to QN; output increases from OM to ON.
- (ii) Long Run Effects under Diminishing Returns—same as above.
- (iii) Long Run Effects under Constant Returns—[Fig. 41]. Price remains the same. Output increases from OM to ON.
- (iv) Long Run Effects under Increasing Returns—[Fig. 42]. Price falls from PM to QN. Output increases from OM to ON.

The effects of a fall in demand can be shown by imagining CD to be the original position of the demand curve and AB the subsequent position. The effects are summarised below.

- (i) Short Run Effects—[Fig. 40] Diminishing Returns. Price falls from QN to PM; output falls from ON to OM.
- (ii) Long Run Effects under Diminishing Returns—Same as above.
- (iii) Long Run Effects under Constant Returns—[Fig. 41]. Price remains the same. Output falls from ON to OM.
- (iv) Long Run Effects under Increasing Returns—[Fig. 42]. Price rises from QN to PM, output falls from ON to OM.

Effect of change in demand when supply curve is vertical: See Fig. 36, p. 182.

The Stages of Adjustment. When demand increases producers will try to increase their output, because thereby their profits will increase. The increase of output and the adjustment between the new demand and the supply, will occur in several stages.

(1) In the short run, the capital equipment of the firm cannot be changed. But the firm can, if necessary, alter the amounts of and the proportions between the variable factors (like raw materials and casual labour). By this process the output will be increased. At this stage the firm will fix the amount to be produced by equating its marginal cost to the price. We can say that the firm remains on its existing short run average cost curve but moves forward along its short run marginal cost curve.

(2) In the long run, if increase of demand continues, the firm will alter its scale of production by introducing more machinery or new kinds of machinery and by changing the organisation and the processes of production as required. We can say that the firm will move forward along its long run average cost curve.

(3) In the very long run, there may occur changes in the supply prices of the factors of production of the commodity and this may lead to alterations in the production system of every firm in the industry. (See under, "Importance of Time in the Theory of Value", p. 187.)

In the long run, after the necessary adjustments in the production system have been completed, there will emerge a new supply curve of the industry. The new supply curve together with the new demand curve (which was formed when demand increased) will determine the new equilibrium price and output.

The processes described above will occur in reverse if demand decreases. In this case the process of adjustment may lead to the exit of some firms. When demand increases, new firms may enter the industry in the long run.

CHANGE OF SUPPLY

Meaning of Changes in Supply. Supply is said to increase when *more goods* are available at the same price. Supply is said to fall when *less goods* are available at the same price. Changes in supply can be shown by shifting the supply curve to a new position.

Causes of Changes in Supply. The supply curve may be shifted to a new position for a variety of reasons. *The cost of production may change* due to,

- (i) changes in the prices of raw materials and wage rates
- (ii) discovery and adoption of new techniques of production

- (iii) changes in labour productivity
- (iv) increase or decrease of taxation, etc.

In the case of agricultural commodities, *the weather influences supply*. In India the production of agricultural commodities depends largely on the monsoons.

In some cases supply is influenced by the *level of income* of the producers. In India now the cultivators are earning more because the prices of agricultural products have risen. This enables cultivators to consume more of the foodstuffs produced by them. Therefore they now send less to the market for sale. This is considered to be one of the causes of high food prices in India.

Effects of Changes in Supply. In the figures given below, DD is the demand curve; SS is the old supply curve; and S_1S_1 is the new supply curve. The effects of *fall of supply* (Supply Curve shifted upwards from SS to S_1S_1) can be summarised as follows:

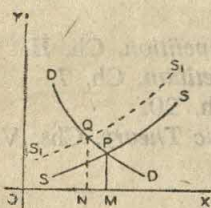


FIG. 43

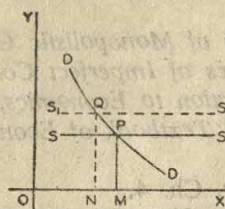


FIG. 44

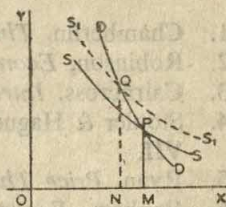


FIG. 45

- (i) Diminishing Returns, short run or long run—[Fig. 43]. Price rises from PM to QN . Output falls from OM to ON .
- (ii) Constant Returns—[Fig. 44]. Price rises from PM to QN . Output falls from OM to ON .
- (iii) Increasing Returns—[Fig. 45]. Price rises from PM to QN . Output falls from OM to ON .

The effects of *increase* of supply can be determined by imagining S_1S_1 to be the original supply curve and SS the new supply curve. The effects can be summarised as follows:

- (i) Diminishing Returns, short run or long run—[Fig. 43]. Price falls from QN to PM . Output increases from ON to OM .
- (ii) Constant Returns—[Fig. 44]. Price falls from QN to PM . Output increases from ON to OM .
- (iii) Increasing Returns—[Fig. 45]. Price falls from QN to PM . Output increases from ON to OM .

CHANGES IN BOTH DEMAND AND SUPPLY

Changes in both demand and supply can be analysed by shifting both the demand and the supply curves.

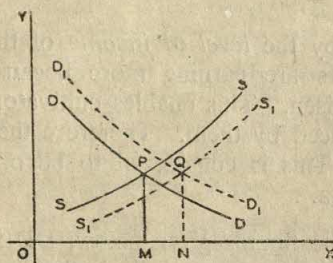


FIG. 46

Fig. 46 illustrates the case where both demand and supply have increased and the supply is under diminishing returns. DD and SS are the old demand and supply curves. D_1D_1 and S_1S_1 are the new ones. The effects in this case are change of price from PM to QN and change of output from OM to ON . Other cases can be analysed similarly.

RECOMMENDED READINGS

1. Chamberlin, *Theory of Monopolistic Competition*, Ch. II.
2. Robinson, *Economics of Imperfect Competition*, Ch. 7.
3. Cairncross, *Introduction to Economics*, Ch. 20.
4. Stonier & Hague, *A Textbook of Economic Theory*, Chs. VI, VII.
5. Ryan, *Price Theory*, Ch. 4.
6. Benham, *Economics*, Chs. XV, XVIII.
7. Samuelson, *Economics* (9th Edition), Chs. 4, 20.
8. Watson, *Price Theory and Its Uses*.

EXERCISES

1. Explain the assumptions of perfect competition and show why marginal cost will equal price under perfect competition. (C.U. B.Com. '64, '71).
2. Explain the concepts of marginal revenue, marginal cost and average cost. Why in the long run must the firms be operating at the point of lowest long run average cost in case of perfect competition? (C.U. B.Com. '67).
3. Explain the importance of the time element in the theory of value. (C.U. B.A. '64; See C.A. Final Nov. '70).
4. Distinguish between prime costs and supplementary costs and examine the importance of this distinction in the fixing of prices. (C.U. B.Com. '63).
5. Show how the price of a commodity is determined by the intersection of demand and supply curves in a competitive market. Is it possible for price to fall, if there is an upward shift in the demand curve? (C.U. B.A. '67).
6. Show how in perfectly competitive equilibrium, the price of a commodity is equal to its marginal and average cost of production. (C.U. B.Com. '62, '65).
7. Can perfect competition exist if production follows the law of decreasing costs? (C.U. B.A. '65).
8. A firm in a perfectly competitive industry finds that the demand for its product has increased. Explain the stages through which long-term normal price under the changed conditions will be reached. (C.U. B.A. '66).

9. "As a general rule, an increase in demand, supply curve being given, will raise both price and the quantity bought and sold in a competitive market". Critically examine the statement. (C.U. B.A. '69).

10. Examine the influence of cost of production on the determination of value (a) in the short run and (b) in the long run. (C.U. B.Com. '69).

11. Distinguish between a change in demand and a change in the quantity demanded, noting the causes of each. Illustrate your answer with examples. (C.U. B.A. '73).

12. "In the short run price is determined by demand, and in the long run by the cost of production." Discuss. (C.U. B.A. '73).

13. "If a firm does not cover average variable cost in a competitive market, it will go out of production in the short period". Elucidate. (C.U. B.A. '68).

14. Explain the meaning of the term 'equilibrium price' under perfect competition. Explain why the shorter the period of time considered, the more important is the role of demand vis-a-vis supply in determining price. (C.U. B.A. '74).

CHAPTER 14

THEORY OF VALUE UNDER IMPERFECT COMPETITION

PRICE-OUTPUT EQUILIBRIUM UNDER MONOPOLY

The Principle of Maximum Net Revenue. There is monopoly when a single firm controls the entire output of a commodity. The monopolist uses his power of controlling output to get the highest possible profit. He will not put on the market a very large quantity of the commodity because in that case he will have to reduce his price to low levels and his profit will be low. If he puts on the market a comparatively small quantity, he may charge high prices but the aggregate profit will be low. The monopolist will not follow either of these policies. He will fix his output in such a way as to secure the maximum possible net revenue or net profits.

The condition of equilibrium. It can be shown that the *net revenue is maximum at the level of output where marginal cost is equal to the marginal revenue.*

Suppose that a monopolist can sell 9 units of a commodity at Rs. 5 each. The total revenue is Rs. 45. Suppose that he can sell 10 units at Rs. 4.75 each. The total revenue now is Rs. 47.50. The marginal revenue is Rs. 2.50. If the marginal cost, *i.e.*, the cost of producing the 10th. unit is less than Rs. 2.50, the monopolist will gain by producing the 10th. unit. So long as marginal revenue is greater than marginal cost the monopolist will go on increasing his output because every increment of output will give to the monopolist a positive increment of profit. He will stop when marginal revenue is equal to marginal cost. Beyond this point marginal cost is greater than marginal revenue and further production involves a loss. *Hence total revenue is maximum at the level of output where marginal revenue is equal to marginal cost.*

Diagrammatic Illustration. The above proposition can be diagrammatically illustrated as follows. Let DD^1 be the demand curve for a monopolist's product or the average revenue curve and MC the curve of marginal costs. AC shows the average cost. Since under monopoly the marginal revenue is always less than price, the marginal revenue at each level of output will be shown by a downward sloping line lying below the average revenue curve. (See p. 163). Let MR be the curve showing marginal revenue. MR and MC intersect at K . Therefore marginal cost and marginal revenue are equal when

output is OA. The average revenue curve shows that when output is OA, the price is OP or AB. The monopolist will secure maximum net

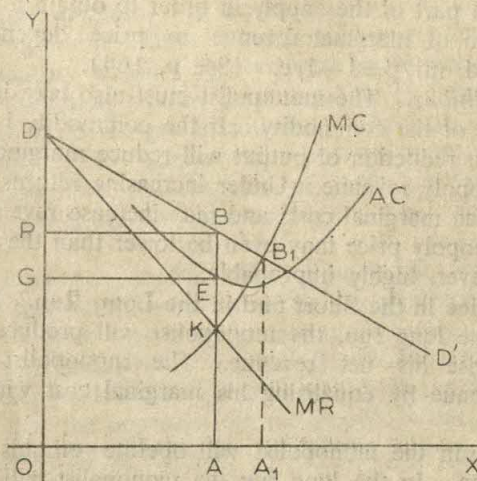


FIG. 47

revenue when he produces OA units. The monopoly price is AB .

The net monopoly revenue,

$$= \text{total revenue} - \text{total Cost}$$

$$= OA \times AB - OA \times AE$$

$$= OABP - OABE = PBEG$$

If the industry had been under competitive conditions, on certain assumptions, the price would have been A_1B_1 and the total output would have been OA_1 .

Factors taken into account by the monopolist in fixing price.

The monopolist cannot directly control the price because the amount of a commodity which can be sold at a particular price depends on the market demand schedule. The monopolist can, to a certain extent, influence demand, e.g., by advertisement and salesmanship, but on the whole the demand depends on consumers' preferences over which the monopolist has little control. A monopolist therefore adjusts the supply (over the amount of which he has full control) to that level which will maximise his net revenue. The first step taken by the monopolist is usually to fix the price. By a process of trial and error he finally fixes the amount to be produced.

The two most important factors which the monopolist has to take into account in fixing prices are elasticity of demand and the cost conditions.

1. *Elasticity of demand.* If the demand is elastic, raising prices will reduce consumption greatly. But if demand is inelastic prices

might be raised considerably without reducing consumption much. In the case of commodities with highly inelastic demand the monopolist may even destroy a part of the supply in order to obtain a higher total revenue. The ratio of marginal revenue to price depends on the elasticity of demand. $mr/p = 1 - 1/e$. (See p. 164).

2. *Cost Conditions.* The monopolist must also take into account the cost conditions of the commodity. If the commodity is subject to diminishing returns, reduction of output will reduce marginal costs and may increase monopoly revenue. Under increasing returns, expansion of output will reduce marginal costs and may increase revenue. In the latter case the monopoly price may even be lower than the competitive price. It is, however, highly improbable.

Monopoly Price in the Short and in the Long Run. In the short run and also in the long run, the monopolist will produce an output which will maximise his net revenue. The monopolist will earn his maximum revenue by equalising his marginal cost with the marginal revenue.

In the short run the monopolist will operate on his short run marginal cost curve. In the long run the monopolist will operate on his long run marginal cost curve. In long run the monopolist will be able to reorganise the scale of production. Also there will be differences in the shape and position of the average revenue curve (demand curve) between the short run and long run of the product.

It can be concluded the profit maximisation formula ($mr=mc$) is applicable in both the short and the long run monopoly price. The differences between the short and long monopoly price follow from the shape and position of the curves mentioned above.

LIMITS TO THE POWER OF A MONOPOLIST

Absolute and unqualified monopoly is rarely found. Usually the monopolist has a high degree of control over prices and production, not complete control. In theory the monopolists always tries to secure maximum benefit but in practice he gets what Marshall called a "Compromise Benefit". In most cases the actual monopoly price is less than the maximum possible price because of the following reasons :

1. *Potential competition* : Only in rare cases is new entry absolutely barred. Patents, copyrights and government monopolies are possibly the only cases where new competitors cannot come. In other cases possibility of competition exists and too high prices will tempt newcomers into the field. If *dynamic entrepreneurs* enter into a monopolised industry, competition may be restored.

2. *Substitutes* : Practically every commodity has a substitute. The monopolist can maintain his position only so long as the substitutes of the monopolised commodity are much less satisfactory. But if the monopoly price is too high people will begin to use less satis-

factory substitutes (e.g., kerosene oil or gas for electricity). The monopolist therefore charges less than the maximum possible price.

3. *Public opinion*: In democratic countries public opinion is always an important factor. Extortionate prices may goad the public to take retaliatory action (e.g., boycott) or induce the government to control the monopoly by law or nationalise it. Monopolists nowadays take steps to keep the public satisfied. The best way of doing so is to charge fair prices. *Consumers' resistance* may reduce price.

4. *Legislation*: In the case of public utility services, like gas or electric supply, the Government by law limits the prices which can be charged.

5. *Consumers surplus*. The monopolist must consider the consumers' surplus obtained from the commodity. The monopolist cannot fix his price above the consumers' surplus.

6. *The Countervailing Power*. The monopolist buy raw materials etc. from other producers. The monopolist pay wages to their workers. It is found that the power of the monopolist is curtailed by the power of the suppliers of goods and of Trade Unions. This is called Countervailing Power. (See p. 78.)

EFFECTS OF AN INCREASE IN THE DEMAND FOR A MONOPOLY PRODUCT

An increase in the demand for a monopolised commodity means that consumers are willing to pay more for the same quantity of the commodity than before. The demand curve has moved upwards. Naturally the marginal revenue curve also moves upwards and intersects the marginal cost curve at a higher point. Since the monopolist will operate at the point where marginal cost is equal to marginal revenue the new output will be larger than before. The price also will generally be higher but cases are conceivable where the price may be lower. These propositions may be demonstrated diagrammatically as below.

In Figures 48 and 49, SC is the marginal cost curve. DA and DR are the demand curve and the marginal revenue curve respectively.

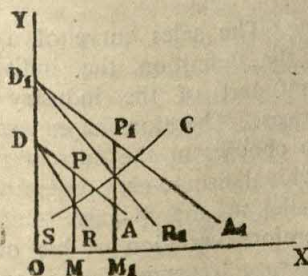


FIG. 48

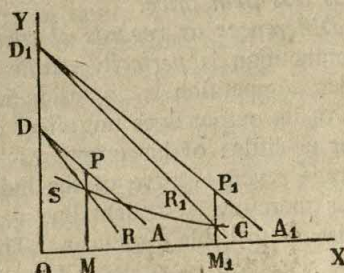


FIG. 49

tively before increase of demand, and D_1A_1 and D_1R_1 the demand curve and the marginal revenue curve after increase of demand.

Fig. 48 shows a monopoly operating under diminishing returns. In this case, when the demand curve rises from DA to D_1A_1 the output increases from OM to OM_1 and the price rises from MP to M_1P_1 .

Fig. 49 represents a situation where the marginal costs decline at the relevant outputs. In this case, when the demand curve rises from DA to D_1A_1 the total output increases from OM to OM_1 but price falls from PM to P_1M_1 .

In both cases, the extent of variation of output and prices depend on the slopes of the cost curve and the marginal revenue curve.

The effects of a fall in demand can be analysed in the same way by considering D_1R_1 as the original position of the marginal revenue curve and DR the later position.

DIFFERENCES BETWEEN COMPETITION AND MONOPOLY

Earlier writers on economics thought that the theory of pricing under monopoly was clearly distinguishable from the theory of pricing under competition. Modern writers have shown that there is no clear cut difference between the two. The fundamental principle is that the individual firm (both under monopoly and under competition) seeks to maximise its net revenue and therefore it operates at that level of output where the marginal revenue is equal to marginal cost. But under competition there are many firms while under monopoly there is only one firm. As a result, the revenue maximisation principle ($mr=mc$) leads to different results in the two cases. The differences between competitive price and monopoly price are stated below.

1. *In perfect competition, $p=mc$; in imperfect competition, $p > mc$.* Under competition the individual firm's output is a small part of the total output. Variation of its output has no effect on prices and therefore *marginal revenue is equal to price*. But the monopolist is by definition the sole producer. Therefore, if he wants to sell more, he must reduce the price. Hence, under monopoly the *marginal revenue is less than price*.

2. *Differences as regards elasticity.* The sales curve of a firm under competition is *perfectly elastic*. By definition the individual firm under competition is an insignificant part of the industry and variation of its output does not affect prices. Therefore he can sell as much (or as little) of his output as he chooses at the current price. The average revenue curve of the individual firm under perfect competition is therefore a straight line parallel to the X-axis. But the monopolist is the sole producer. Therefore variation of his output will cause variation in prices. The average revenue curve of the monopolist is a *curve sloping downwards*.

3. *Monopoly price is higher than competitive price.* Under competition price equals marginal cost, while under monopoly price exceeds marginal cost. In Fig. 47, AB is the monopoly price but if the commodity is produced under competitive conditions the price will be A_1B_1 (assuming that the demand curve and the cost curve remain unchanged).

It is possible to imagine an exception to the rule that monopoly price is higher than competitive price. There may be a commodity with a very steeply decreasing cost curve and a highly elastic demand. In such a case, monopolisation may produce so large economies that the monopolist will make maximum gain by selling at a price which is lower than what the price would be under competition. This is, however, a highly improbable situation.

4. *Monopoly output is lower than competitive output.* In Fig. 47 the monopoly output is OA. The competitive output (with the same demand and cost curves) will be OA_1 . The monopoly output may be higher than the competitive output in the case of a commodity having a steeply decreasing cost curve and a highly elastic demand.

5. *Differences as regards the slope of mc curve.* Under perfect competition in long run, equilibrium is possible when the marginal cost is rising at the point of equilibrium. (See para 1, p. 176). But under monopoly there may be equilibrium whatever may be the shape of the marginal cost curve.

6. *The amount of profits.* Under perfect competition, the firm in the long run makes normal profits. Under monopoly, the firm gets super-normal profits.

PRICE DISCRIMINATION

Definition and Classification. Price discrimination means charging different prices from different buyers of the same commodity or service. This cannot be done under perfect competition but can be done under monopoly.

There are three possible types of price-discrimination :

1. *Personal Discrimination:* The monopolist can charge higher prices from buyers whose intensity of desire is large or whose ability to pay is greater. Usually this type of discrimination is not made openly but in a disguised manner. Thus the new book of a famous author may first be issued as *de luxe* edition with a very high price. Only the richer classes buy this. Finally a low priced (e.g., a paper back) edition is issued for the poorer classes. The price charged for the *de luxe* edition is considerably higher than the cost of producing it. But it has a prestige value for which those who are able may be induced to pay more. By this process each class of consumer is squeezed in turn. The principle is applied to railway and tramway passengers.

People travelling in the upper classes always pay more than the cost of providing extra facilities.

2. *Local Discrimination* : Different prices may be charged from different localities. Prices in fashionable shops, where the richer buyers go, are often higher than those in ordinary shops where the poorer classes buy. Sometimes the monopolist charges lower prices in a foreign market than in the home market. This is known as 'Dumping'.

3. *Trade or Use Discrimination* : For different uses the prices may be different. Thus electricity is sold to factories at a much lower rate than that for domestic consumption.

When is Price-discrimination Possible? According to Pigou, price-discrimination is possible only if *two conditions* are satisfied.

1. The demand must not be transferable from the high priced market to the low priced market. If rich people do not buy *de luxe* editions but wait for cheap ones, personal discrimination in books is not possible.

2. The buyers of low priced articles must not be able to resell them in the high priced market. If industrial buyers of cheap electricity are allowed to resell it for direct consumption there can never be two prices for electricity.

The examples given below show the *different situations* under which price discrimination is possible :

(i) Where some consumers are ignorant of what prices are being charged from others, the monopolist finds it easy to charge different prices.

(ii) When some consumers can be induced to believe that they are getting something different from others, they can be charged at a higher rate. This is frequently contrived by slightly varying the product (*e.g.*, by using different colours or different kinds of packages).

(iii) In the case of direct services, which cannot be resold by the buyer (*e.g.*, medical advice or a haircut), discrimination is easy.

(iv) Different prices can be charged from consumers situated in different countries or at a distance from one another.

(v) Where the price-difference is small in amount, the consumers may not object.

(vi) Price-discrimination is possible only if there is no legal bar. In some cases (*e.g.*, in public utility services) the monopolist may be compelled by law to charge uniform prices.

When is Price-discrimination Profitable? Ordinarily no monopolist will practice price-discrimination unless it is profitable for him to do so. Price-discrimination is profitable only if the following conditions are satisfied¹ :

¹ Robinson, *Economics of Imperfect Competition*, and Stigler, *Theory of Price*.

1. The demand for the monopoly product can be split up into different markets.
2. The elasticities of demand in the different markets are different.
3. The cost of keeping the various markets separate is not large relative to the differences in the demand elasticities.

The second condition is vital. If the demand elasticities in the different markets are equal, there is no scope for price discrimination. But if they are different, the monopolist will gain by charging different prices in the different markets.

The price obtained by the monopolist in each market depends upon the output offered there and the shape of the average revenue curve in the market. At equilibrium (when maximum profits are earned) certain relations must hold good between the different variables involved. These are explained below.

Conditions of Equilibrium under Discriminating Monopoly.

The discriminating monopolist has to decide the following problems—(i) the total output he would produce (ii) the distribution of the output between the different markets, and (iii) the price to be charged in each market.

The conditions of equilibrium under discriminating monopoly are stated below.

Let us suppose that,

- (i) there are two markets available to a monopolist, market A and market B ;
- (ii) he sells x_1 units in A and x_2 units in B ;
- (iii) the marginal cost of producing $(x_1 + x_2)$ is Y ;
- (iv) in market A, the average revenue (or price) obtained by selling x_1 is p_1 and in market B the average revenue (or price) obtained by selling x_2 is p_2 ; and
- (v) e_1 and e_2 are the elasticities of demand, at the relevant output levels, in markets A and B respectively.

The monopolist will fix x_1 and x_2 in such a way as to maximise his total net revenue. It is assumed that he can vary his output in any way he likes.

In market A his net revenue will be maximum when the marginal revenue (at output x_1) is equal to Y , his marginal cost. Similarly in market B his net revenue is maximum when the marginal revenue (at output x_2) is equal to Y . Therefore, at equilibrium the marginal revenue in each market must be the same (both being equal to Y , the marginal cost of producing the whole output). If the marginal revenue in any market is greater than Y , the monopolist increases his total revenue by selling more in that market. If the marginal revenue in any market is less than Y , the monopolist is losing and must reduce

his sales in that market. Thus, at equilibrium, the following conditions must be satisfied :

- I. The marginal revenue in all the markets must be equal.
- II. The marginal revenue in each market must be equal to the marginal cost of producing the whole output.

The conditions stated above must both be satisfied. These conditions can also be extended to cover the case where a firm is a monopolist in one market but is operating under conditions of perfect competition in another. In this case, the marginal cost of producing the whole output must equal the price prevailing in the perfect market. The part of the output, which is sold in the monopolised market, must be so restricted as to equalise the marginal revenue in that market to the marginal cost of the whole output. The price in the latter market will be higher than the price prevailing in the perfect market. This consequence follows from the fact that in the perfect market, the average revenue curve of the firm is a horizontal straight line while in the other market it is downward sloping.

The relationship between marginal revenue and price is given by the formula $mr = p \left(1 - \frac{1}{e}\right)$. Using the symbols indicated earlier we get the following equations :

$$\text{Marginal Revenue in market A} = p_1 \left\{ 1 - \frac{1}{e_1} \right\}$$

$$\text{“ “ “ “ B} = p_2 \left\{ 1 - \frac{1}{e_2} \right\}$$

It has been shown that when the monopolist is earning maximum net revenue, the marginal revenues in the two markets must be equal. Therefore, at equilibrium :

$$p_1 \left\{ 1 - \frac{1}{e_1} \right\} = p_2 \left\{ 1 - \frac{1}{e_2} \right\}$$

In this equation if $e_1 = e_2$ then $p_1 = p_2$. Therefore, it follows that when the demand-elasticities (in the different markets, at the relevant output levels) are equal, the monopolist will charge the same price in the different markets. If the demand elasticities are different, price-discrimination is profitable, and therefore possible.

The relationship between the price in the two markets ($p_1 : p_2$) can be calculated from the equation given above. In general, the price will be higher in the market where the elasticity of demand is lower.

The analysis of price discrimination, given above, can be easily extended to the case of more than two markets.

Example : Suppose that elasticity in market A is equal to 2 and elasticity in market B is equal to 3. Then,

$$p_1 \left\{ 1 - \frac{1}{2} \right\} = p_2 \left\{ 1 - \frac{1}{3} \right\}$$

$$\text{or } \frac{p_1}{p_2} = \frac{1 - \frac{1}{3}}{1 - \frac{1}{2}} = \frac{4}{3}$$

If in market A, price is $p_1 = \text{Rs. } 4$, then in market B, price is $p_2 = \text{Rs. } 3$.

Diagram. The conditions of price-output equilibrium under discriminating monopoly is shown below.

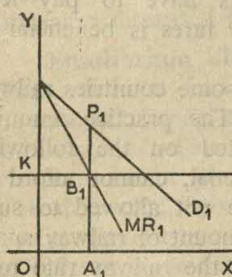


FIG. 50

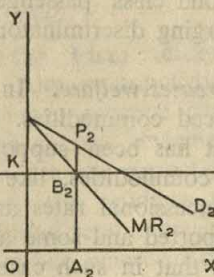


FIG. 51

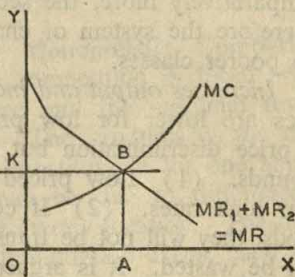


FIG. 52

In Fig. 50, DD_1 shows the average revenue and MR_1 the marginal revenue in a market I. In Fig. 51, DD_2 shows the average revenue and MR_2 the marginal revenue in market II. These markets have different elasticities of demand at each price. Fig. 52, shows the combined marginal revenue earned from the two markets. The curve MR is obtained by adding the curves MR_1 and MR_2 horizontally that is, $MR_1 + MR_2 = MR$.

MC shows the marginal cost curve of the whole output of the monopolist. The profit maximising output is shown by the intersection of MC and MR .

At equilibrium the output is OA and marginal revenue is MR . Therefore $OK = MR$. The line KK shows the marginal revenue and also the marginal cost. In market I the marginal revenue is OK and price is A_1P_1 . Similarly in market II the marginal revenue is OK and price is A_2P_2 . The diagram shows that MR in all the markets must

be same and the MR must also equal MC. It is also shown that $MR_1=MR_2=MC$.

Is Price-discrimination Beneficial and Desirable? Price-discrimination may sometimes be *beneficial to society*. For example, if a doctor charges low fees from poor patients and high fees from rich ones, poor people gain and the practice may be justified on that ground. It is not socially objectionable to make the rich pay more for some commodity or service. They have greater ability to pay and society does not lose if money is transferred from one group of rich persons (the rich buyers) to another group of rich persons (the monopolists).

Beneficial to the poor. Another example of the same type may be given. If railway fares were made uniform they would be higher than the present second class fares but lower than the present first class fares because the entire cost of providing the service would have to be shared equally by all passengers. Because first class passengers pay comparatively more, the second class passengers have to pay less. Therefore the system of charging discriminatory fares is beneficial to the poorer classes.

Increases output and increases welfare. In some countries railway rates are lower for low priced commodities. The practice amounts to price discrimination but it has been supported on the following grounds. (1) Low priced commodities, like coal, cannot afford to bear high rates. (2) If concessional rates are not allowed to such goods, they will not be transported and some amount of railway space will be wasted. It is argued that in such cases the railway rate may be fixed at a level lower than the full average cost of production. So long as the rate is high enough to cover the variable costs and make some contribution towards the fixed costs, both the railways and the public gain by discriminatory rates. The above arguments are applicable to public utilities, "where large fixed facilities are already in existence and would otherwise go unemployed except for the practice of price discrimination".¹ It can be argued that in situations like the above, price discrimination increases the total output of the monopolised service or commodities. Hence in such cases price discrimination can be justified on welfare grounds.

The Evils of price discrimination. The evils of price discrimination are stated below :

1. The price charged in price discrimination is based on the principle, "as the traffic will bear." This means that every consumer is charged the maximum price he can pay. Therefore price discrimination leads to exploitation of consumers.

¹Liebhafsky, *The Nature of Price Theory*, p. 249.

2. From the above it follows that the consumers' surplus is wholly extracted or much reduced.

3. All the evils of the monopoly are found in the price discrimination in an aggravated manner.

VALUE UNDER MONOPOLISTIC COMPETITION

The term Monopolistic Competition is used to denote competition among a group of firms producing goods similar to one another but not absolutely identical, *e.g.*, firms producing different brands of chocolates or of tooth paste. (See p. 161). The group must contain a fairly large number of firms and there must be free entry, *i.e.*, any firm, desirous of producing goods similar to those already produced by the group, must be free to do so.

As regards determination of value under monopolistic competition, two questions arise: (i) when will the individual firm under monopolistic competition be in equilibrium and (ii) when will the industry or the group as a whole be in equilibrium. The two questions are discussed below.

Equilibrium of the Firm under Monopolistic Competition. The individual firm under monopolistic competition is faced with a downward sloping average revenue curve and the marginal revenue is always less than the average revenue. The products of the different firms in the group are not perfectly substitutable for one another. The difference between the products may be due to differences in quality, trade name, brand reputation, or merely location. The degree of differentiation varies but, wherever differentiation exists, each firm's product has a unique demand schedule. If such a firm wishes to increase its sales it must either reduce the price or shift the demand curve by some form of sales pressure—advertisement, special service or, in suitable cases, bribery or coercion. If shifting the demand curve (or increasing consumers' preference for the product) is not practicable, the only way to increase sales would be price reduction.

Increase of sales by reduction of price reduces the marginal revenue of the firm. But so long as the marginal revenue is greater than the marginal cost, it is profitable to expand production. The total revenue is maximum at the level of output where *the marginal revenue is equal to the marginal cost*. The equality between marginal revenue and marginal cost determines the most profitable output and the position of equilibrium for the individual firm under monopolistic competition. There is no difference on this point between a firm under monopolistic competition and firms under any variety of imperfect competition or under perfect competition. The proposition is based on the assumption that every firm tries to maximise its net revenue.

But in monopolistic competition, it is to be remembered that, price reduction is not the only method of increasing sales. Advertisement, propaganda and salesmanship play an important part. The expenditure incurred for these purposes is a substantial part of the total expenditure of the firm. Under monopolistic competition, therefore, the net revenue which the firm seeks to maximise is,

$$[\text{Price} \times \text{Output}] - [\text{Production Costs} + \text{Selling Costs}].$$

When equilibrium conditions are discussed with the aid of the usual average and marginal cost curves, the selling costs must somehow be included within them. (There are considerable difficulties in doing so). One general principle may, however, be laid down. The firm will extend its selling expenditure up to the point at which the marginal revenue from the sales expenditure is equal to the

marginal increment of such expenditure. Taking production costs and selling costs together, the marginal cost must also be equal to the marginal revenue.

The equilibrium position of the individual firm is diagrammatically illustrated in Fig. 53. AC and MC are the average and the marginal cost curves; AR and MR are the average and the marginal revenue curves. At output ON, marginal revenue is equal to

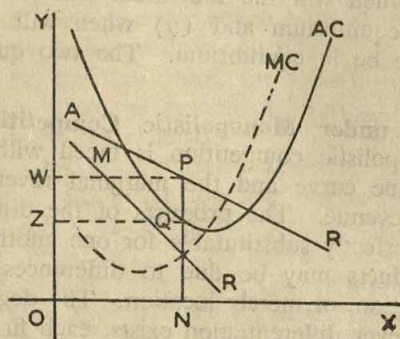


FIG. 53

marginal cost. NQ is the average cost of producing ON and PN is the average revenue. The firm is earning supernormal profits amounting to $ON \times PN - ON \times QN = ON \times PQ = \text{rect. } PNQ$.

Group Equilibrium under Monopolistic Competition. If free entry into the group is assumed, there will be changes in the number of firms in the group in the long run. If, in the short run, there are super-normal profits (like PWZQ in Fig. 53) new firms will come in. In the converse case some of the existing firms will go out of production. In the first case, when more firms have come in, the total output of the group will be larger and, therefore, the sales of each firm will be lower, i.e., the average revenue curve of each individual firm will move to a lower level (each firm sells less than before at the same price). In the converse case (exit of firms for losses) the average revenue curve will move to a higher level. The process will go on until super-normal profits or losses disappear completely and each remaining firm earns only its average costs including normal profits.

[In the long run $ac=p$.] At equilibrium in the long run the average revenue curve of the individual firm becomes a tangent of the average cost curve. This is the only position where average cost is equal to price.

The long run position of group-equilibrium is shown in Fig. 54. The average revenue curve AR is a tangent of the average cost curve AC . The equilibrium output is OM . The price is PM which is equal to the average cost. Super-normal profits or losses have vanished.

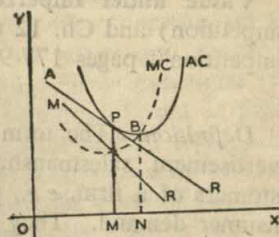


FIG. 54

The following points are to be noted in connection with long run equilibrium under monopolistic competition :

(i) Cost conditions in the different firms are identical only when the factors of production used by the firms are identical and the factors' markets are perfect. To assume such a thing is unrealistic. [Chamberlin assumed identical cost conditions, but remarked that it was a 'heroic' assumption to make.]

(ii) When cost conditions are not identical, some firms will continue to make super-normal profits even in the long run.

(iii) At long run equilibrium, the average revenue curve touches the average cost curve. But the average cost curve is U-shaped, while the average revenue curve under monopolistic competition is a downward sloping line. Therefore the average revenue curve will touch the average cost curve at some point to the *left* of the lowest point of the average cost curve. In Fig. 54, AR touches AC at P while the lowest point of AC is B . Only a horizontal line can touch AC at B . Hence the tangency principle leads to the curious result that under monopolistic competition each firm, even at long run equilibrium, produces less than its optimum output. Under perfect competition, at long run equilibrium, each firm produces its optimum output but under monopolistic competition, at long run equilibrium, each firm has an unutilised capacity or "excess capacity."

(iv) Group equilibrium under monopolistic competition was explained and theorised by Chamberlin. It is called "Chamberlin's large group". In this situation there is free entry. In the above para it was shown that in a large group there is excess capacity. Samuelson says that, "Free entry of numerous imperfect competitors may wipe out profit but still leave waste". "The consumer has to pay for chronic excess-capacity operation of too many sellers, each producing too little."—Samuelson.¹

¹ Samuelson, *Economics*, p. 515-16.

Value under Imperfect Competition. See above (Monopolistic Competition) and Ch. 12 under "Equilibrium of the Firm : Imperfect Competition", pages 177-9.

SELLING COST

Definition. The term Selling Cost is used to denote costs of advertisement, salesmanship and other expenses incurred to please the customers of a firm, e.g., prizes and free gifts. Selling costs influence consumer demand. They shift the average revenue curve of the firm to a higher level.

Two types. Advertisements are of two types (a) informative and (b) competitive. The object of informative advertisement is to acquaint the people with useful products. The object of competitive advertisement is to promote the sale of the products of a particular firm as against those of others.

Informative advertisement spreads knowledge and is therefore socially advantageous in all cases where the goods advertised are useful. Advertisements of harmful goods are socially disadvantageous.

Competitive advertisements are useless from the social standpoint. They involve wastage of resources.

Under pure competition. Selling costs are unnecessary under pure competition. There being many buyers and sellers, it is presumed that every firm under pure competition can sell as much as it wants at the current price. Hence there is no need of selling costs.

Under monopoly. Under monopoly, competitive advertisements are not necessary because there are no competitors. But there may be informative advertisements intended to spread knowledge of the products of the monopolist. Nowadays many monopolists use advertisements as propaganda medium to show that fair prices are being charged or that the goods are of high quality. This is intended to keep the public pleased.

Under monopolistic competition. Selling costs are very important under monopolistic competition and oligopoly. Under these market forms competition is usually very keen and the firms spend large sums of money to fight one another. Selling costs in these cases very often exceed production costs.

The Effect of Selling Costs. Selling Costs increase total costs and *make prices higher than what they would otherwise be*. But one exceptional case may be noted. The effect of sales expenditure usually is to increase demand and increase output. If the commodity is subject to increasing returns, this may cause lower production costs and lower prices. In modern times, however, competitive advertisement costs are so high that they amount to more than the gains from lower production costs. *Therefore, selling costs almost increase total costs and prices.*

The effect of selling costs on sales is very difficult to calculate. It is almost impossible to predict what volume of sales will come from a particular sum spent on advertisement. The effect depends on the nature of the appeal to the consumer and his habits and reasoning capacity. Sometimes they have no effect at all. Firms sometimes give free services to attract customers (e.g., free cleaning of cars at petrol stations). Such practices increase sales of the firm initially introducing them. But eventually all firms are forced to give the same services. The effect on the volume of sale is nullified and the costs of providing the services become a part of the production costs. When one firm is advertising the others have to follow suit. Competitive advertisements may cancel one another, producing no effect on sales. But the firm which does not advertise will lose customers. Thus selling costs are necessary merely to retain the existing volume of sales. This is the reason why even well-established brands have to spend large sums of money on advertisements. They must retain their goodwill.

For the reasons stated above, it is not easy to construct diagrams showing the relationship between selling costs and the amounts demanded or supplied. But various attempts have been made to show the relationship.¹

VALUE UNDER OLIGOPOLY

When there are only a few producers there is said to be Oligopoly. The products of the oligopolists may be identical or they may be differentiated. Definition and classification of Oligopoly—See p. 161.

Why Oligopoly arises. Nowadays pure competition and pure monopoly are not found. We generally find oligopoly and monopolistic competition. The causes of oligopoly are stated below.

- (i) The economies of large scale production.
- (ii) Monopolistic combinations, due to the desire to eliminate competition.
- (iii) Product differentiation which leads to consumer preferences.
- (iv) Tariff barriers. [The elimination of foreign import leads to advantages to local firms.]
- (v) Some firms are able to get cost advantages or institutional advantages.

Characteristics. The characteristics of oligopoly are stated below :

1. *Interdependence.* Pricing under oligopoly is a more complicated problem than what it is under perfect competitions or monopolistic competition. There being only a few producers in an oligopoly it is

¹ Chamberlin, *Theory of Monopolistic Competition*; Boulding, *Economic Analysis*, pp. 578-88 and 616-18; H. Brems, *Product Equilibrium under Monopolistic Competition*, pp. 5-8.

difficult to say how the rivals will react to one another's policy. For example, a price-cut by one producer may or may not be followed by a price-cut by the others. Therefore in an oligopoly each depends on the others.

2. *Varying Power.* Oligopolists have different monopoly power.

3. *Selling Costs.* The oligopolists have to employ various strategies to get a greater share of the market. Advertising is very important in this type of market.

4. *The nature of demand curve.* The market of each oligopolists is uncertain. Therefore price charged depends on the actions and strategies of their rivals.

5. *A state of war.* Rothschild says that oligopolists are usually in a state of war. The cause is that there is keen competition among them.

Price-output equilibrium in oligopoly. The usual method of approaching the problem of oligopoly value and output is to make one or more special assumptions regarding oligopoly behaviour and to deduce the equilibrium conditions that follow from the assumptions made.¹ Some of the models are summarised below.

The Kinked Demand Curve. Some writers are of opinion that in an oligopoly a price-cut by one firm is followed by price-cuts by other firms but a price increase by one firm is *not* followed by price increases by other firms. Oligopolists therefore cannot gain by changing prices and so they try to stick to the existing prices. Prices are stable or rigid at this point.

This is the view of Sweezy and of Hall and Hitch. According

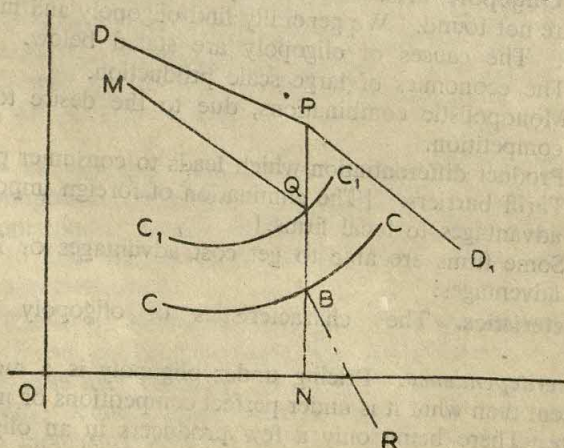


FIG. 55

¹Fellner, *Competition among the Few*, and Ryan, *Price Theory*, Ch. II.

to them the demand curve of an oligopoly product has a "kink" or "corner" at the point corresponding to the existing price. Such demand curves are called "Kinked" or "Cornered" demand curve. Unlike other demand curves, instead of having a smooth slope, it has a kink at P. Similarly the marginal revenue curve is discontinuous at the point Q.

In Fig. 55 PN is the present price and ON is the production of a firm. A price-increase of this firm will reduce its demand to a great extent. Hence demand curve to the left of P is elastic, DP. But a price-cut of the firm will not increase the demand much. So, demand curve to the right of P is inelastic, PD₁. The complete demand curve of the firm is DPD₁ and its marginal revenue curve is MQBR.

If CC is the m.c. curve of the firm then at output ON, the m.r. and m.c. are equal at B and there is stability. But the equality between m.c. and m.r. also occur at Q (where the C₁C₁ is the m.c. curve) and also between the discontinuous part of the m.r. curve (i.e., on any position of m.c. curve between B and Q). Therefore, "any disturbance which affects only the position of the marginal cost curve may leave the short-run equilibrium of price and output entirely unaffected". (Sweezy).

The oligopoly illustrated above is called the Sweezy Model.

There are many difficulties in the Sweezy model :

- (1) There is nothing to show why the rigid price is established.
- (2) It does not show how a new kink forms after a new price.
- (3) Stigler said that there is a lack of empirical confirmation of price rigidity in oligopolistic markets.

Price Leadership. Sometimes under oligopoly, there appears a particular condition, which is said to be Price Leadership. This arises when a few small firms obey the leadership of a big firm. These small firms change their policies according to the price policy taken up by the big one. The small firms believe that the policy of their leader will be the most profitable one.

The Games Model. The Theory of Games, formulated by Morgenstern and Neumann can be applied in this case of oligopoly. Just as in the game of chess one has to make a move by previously assuming his rival's strategy, similarly under oligopoly, a producer has to fix price by previously making some guess on the price policy of others.

Mark-up pricing. Some oligopolists fix their prices on the basis of their average cost of production. They add a certain percentage to the total cost and produce as much as can be sold at the price so calculated. This is known as *mark-up pricing* or *administered prices*. (See Full Cost Theory, Ch. 15).

Special cases. Joan Robinson in her *Economics of Imperfect Competition* avoids the difficulties of oligopoly by assuming that the average revenue curve is so constructed as to take into account the actions of all sellers and their reactions on the sales of the firm's product. This is obviously a very impractical assumption. Chamberlin in his *Theory of Monopolistic Competition* discusses certain special cases of oligopoly with various simplifying assumptions.

Conclusion. The only certain thing that can be said about an oligopoly is that under it each producer has *some* control over the market. The result of this power is that the price is higher than what it would be under perfect competition and monopolistic competition. But since there are rivals, the price is not as high as it would be under monopoly. Also, entry being restricted, average revenue under oligopoly may be permanently higher than average costs.

A Duopoly Model. Value under oligopoly is analysed on the basis of the assumptions of same cost curve and similar demand curve in a duopoly *i.e.*, there are two firms in the market.

In Fig. 56 the demand curve of the product is DD' . We have assumed that the total sale is equally divided between the two firms.

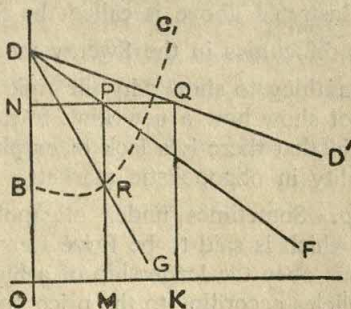


FIG. 56

Hence each has the demand curve DPF . If ON be the fixed value, then each firm can sell NP amount of product ($NP + PQ = \text{total supply}$). Let both firms have BRC as the marginal cost curve and DRG as the marginal revenue curve. In this condition, each firm will fix the value ON , ($ON = MP = QK$) and will sell an amount OM , since only then marginal revenue will be equal to marginal cost and each equals RM . The total sale will amount to $OK (=NQ)$.

RECOMMENDED READINGS

1. Chamberlin, *Theory of Monopolistic Competition*, Ch. V.
2. Benham, *Economics*, Chs. XVI, XVII.

3. Ryan, *Price Theory*, Ch. 10.
4. Cairncross, *Introduction to Economics*, Ch. 16.
5. Samuelson, *Economics*, (9th edition), Chs. 25, 26.
6. Stonier & Hague, *A Textbook of Economic Theory*, Chs. VIII, IX.
7. Henderson & Quandt, *Microeconomic Theory*, Ch. 6.
8. Watson, *Price Theory and Its Uses*, Chs. 16-20.

EXERCISES

1. Analyse how equilibrium output and price are determined under monopoly. (C.U. B.A. '69; C. A. May '69).
2. On what principles does the monopolist fix the price of goods? Point out the restrictions on his price fixing power. (Gau. B.A. '62; Mysore B.Com. '67).
3. In what ways does the theory of monopoly value differ from that of value under competition? (Gau. B.A. '64).
4. When is price discrimination possible and profitable? (See C.A. Final May '71; C.U. B.A. '66, '73).
5. Define the concept of discriminating monopoly. Analyse the conditions of price determination under discriminating monopoly. (C.U. B.A. '68).
6. How is value determined under conditions of monopoly? Under what circumstances does a monopolist find it advantageous to charge discriminatory prices? (See C.A. May '70).
7. How is price determined under monopolistic competition? (G.U. & D.U. '69).
8. Distinguish clearly between perfect competition, monopolistic competition, oligopoly and monopoly. Explain how equilibrium output and price are determined under monopolistic competition. (C.U. B.A. Hons. '62).
9. Discuss how value is determined under an imperfect market (C.U. B.Com. '64, '66, '70, '72; G.U. & D.U. '67).
10. Explain how price can be determined under monopolistic competition, (i) in the short run and (ii) in the long run. (C.U. B.Com. '74).
11. Write a note on oligopoly. (C.U. B.A. '71).

CHAPTER 15

THEORY OF VALUE: MISCELLANEOUS TOPICS

THE MULTIPRODUCT FIRM

Definition. A Multiproduct Firm is one which produces more than one product. Sometimes a firm produces two or more products by *choice*. (For example, a firm may produce refrigerators and also air conditioners, because producing such articles together in the same factory or selling them together may be economical.) Sometimes multiple production is a matter of *necessity*, because it is the consequence of natural or technical factors. (For example, when a cultivator produces rice he also gets straw.) In these cases the *same process* of production yields two or more products. Other examples are, wool and mutton, gas and coke, etc. The second type of multiple production is also known as Joint Supply and the products are called Joint Cost Products.

Classification. Joint Cost Products may be classified into two types. (i) In some cases the products are obtained in a fixed proportion. (For example, if water is electrolysed, two products Hydrogen and Oxygen will be obtained in the ratio of 2 to 1. This proportion is fixed by nature and cannot be altered by man.) (ii) In some cases, however, it is possible to vary the proportions in which the products are obtained. (For example, varying quantities of rice and straw can be obtained by using different kinds of rice seeds and varying quantities of wool and mutton can be obtained by using different types of sheep.)

In the case of joint products with fixed proportions, if the price of one of the products increases, its supply will increase. This will automatically increase the supply of the other products and their prices will fall. Thus the prices of such products are interrelated.

Value. The value of a joint cost product must depend on its demand and supply, just like the value of any other type of product. So, value determination in the case of a joint cost product depends on finding out its demand and supply functions. There is no difficulty as regards the *demand function* because each of the products has buyers and the prices they are willing to pay can be estimated by the producers. If we can find out the *supply function* of each product separately, the demand and the supply functions can be related and the value of such a product can be determined.

When two or more goods are produced by the same process jointly, there are difficulties in determining what is the separate cost of production of each product. This is the main obstacle to the determination of the supply function of a joint cost product. The following procedure has been devised to avoid the difficulty.

1. *Joint Cost Products with Fixed Proportions* : If the joint cost goods are produced in fixed proportions then all the products can be treated together as a single product. Thus if by the same process 1 unit of X and 2 units of Y are obtained, they can be considered to be one unit of product Z, containing 1 of X and 2 of Y. The cost of producing different quantities of Z can be recorded and the supply curve of Z can be determined. The demand curve of Z is obtained by estimating the sale proceeds of Z at different prices. The equilibrium price and output is given by the point of intersection of the demand curve and the supply curve. At equilibrium, in the long run, the following conditions must hold good :

- (a) The average cost of manufacturing the products must be equal to the sum of the prices of all the products.
- (b) The prices of the products must be such that the entire supply of each product is sold (i.e., the demand for each product must be equal to its supply).

2. *Joint Cost Products with Variable Proportions* : If the joint cost goods are produced in varying proportions, the firm can find out the *total cost* of producing different combinations of the goods and the *total revenue* to be expected by selling all the products. From these figures the firm can determine what combination of products and how much of each product it will produce and supply at different prices of the products.

Diagram. The procedure stated above is diagrammatically illustrated by the figure given alongside. Suppose that a firm manufactures two products X and Y. Units of X and Y are measured on OX and OY respectively.

The firm can find out the different combinations of X and Y that can be produced at the same cost of production. (For example, with an expenditure of Rs. 1000, the firm may produce 40X and 30Y or 30X and 40Y and many other such combinations.) If the different combina-

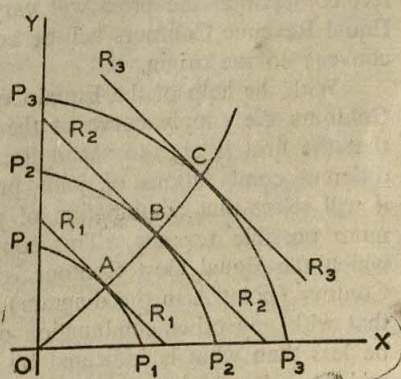


FIG. 57

tions produced at a particular cost are plotted graphically we get a line like P_1P_1 . With more expenditure we get lines situated on higher levels like P_2P_2 , P_3P_3 etc. These lines are called Equal Cost Contours. They are also known as Product Transformation Curves and Production Possibility Curves. (See Ch. 23).

A movement along an Equal Cost Contour involves substitution of one product by another. Suppose that $4X+5Y$ costs the same as $5X+3Y$. In the second situation one unit *more* of X is being produced and as a result 2 units *less* of Y is obtained. In this case 2 units of Y have been substituted by 1 unit of X . The rate at which such substitution can be made is different at different points of the curve. The rate is shown by the slope of the tangent to the curve at the point under consideration. It is called the Rate of Product Transformation RPT. (Cp. Isoquants and the RTS, See p. 150).

Product Transformation Curves are generally *concave to the origin*, as shown in the diagram. The reasons are as follows : (i) Production of more of one commodity X must involve production of less of the other commodity Y , otherwise the cost will not remain the same. (ii) Increase of the proportion in which one of the commodities is produced is likely to be expensive. Therefore, increased production of one of the commodities will involve reduction in the production of the other commodity at a progressively higher rate, if costs are to be kept at the same level.

The lines R_1R_1 , R_2R_2 , R_3R_3 in the diagram are Equal Revenue Contours. They show different combinations of X and Y that produce the *same revenue*. Under perfect competition the Equal Revenue Contour must be a straight line, as shown in Fig. 54. The reason is that in the case the firm is a price taker ; it cannot influence price and it can sell whatever it produces at the current price. Under imperfect competition the price will vary with variation of output and the Equal Revenue Contours will be convex (or partly concave and partly convex) to the origin.

With the help of the Equal Cost Contours and the Equal Revenue Contours the supply curve of the firm can be determined. Suppose that the firm is able to spend Rs. 1000 and with it can produce the different combinations of joint products shown by P_1P_1 . Naturally it will select that combination of products which will yield the maximum possible revenue. This combination is shown by the point at which the Equal Cost Contour is tangential to an Equal Revenue Contour (point A in the diagram). A glance at the diagram will show that with any other combination on P_1P_1 the firm's total revenue will be less than what is indicated by R_1R_1 . If the firm can spend more and be on a higher Equal Cost Contour like P_2P_2 it will, for the same reasons as stated above, choose the combination shown by B where P_2P_2 is tangential to another Equal Revenue Contour R_2R_2).

So the production plans of the firm will lie on OABC which is the locus of the points of tangency between the Equal Cost Contours and the Equal Revenue Contours. Of the different plans it will choose the one which will give it the maximum net revenue per period. When the prices of the products change, the Equal Revenue Contours change their position. For example, if the price of Y rises relatively more than that of X each Equal Revenue Contour will become less steep (the angle between R_1R_1 etc. and OX will become smaller). Therefore, the new position of OABC will lie to the left of its former position. The firm will now produce relatively more Y. Thus we can find out how much of a product the firm will produce at each price of the product. From these data the firm's supply curve of each product can be obtained. For determining the equilibrium position of the industry it is sufficient to know the demand curve and the aggregate (or industry) supply curve.

An alternative approach. When product proportions are variable it is possible to calculate the marginal cost of each of the products. Suppose, for example, that 5 units of gas and 4 units of coke can be obtained by an expenditure of Rs. 100. Suppose also, that with a readjustment of process it is possible to get 6 units of gas and 4 units of coke with an expenditure of Rs. 110. Then the marginal cost of gas is Rs. 10 per unit. With variable proportions, the conditions of equilibrium for a joint cost product are as follows :

- (i) under perfect competition, marginal cost = price
- (ii) „ imperfect „ „ „ = marginal revenue.

CONNECTED VALUES

The demand and supply of certain commodities are interrelated in such a way that changes in the value of any one of them produce changes in the value of the others. These are known as cases of Connected Values or Interrelated Values. Joint Cost Products, discussed in the previous section, come under this category. There are three other types of connected values. They are discussed below.

Joint Demand. Commodities are said to be in joint demand when they are wanted together, e.g., motor car and petrol, pen and ink. Such commodities are also called *Complementary Goods*. Prices of complementary goods move in opposite directions. If there is a fall in the price of fountain pens, more pens will be purchased, the demand for ink will increase and the price of ink will rise (assuming that there is no change in the supply conditions of ink).

The valuation of complementary goods is complicated by the fact that the demand schedules of such goods are interrelated. The demand for motor cars will be seriously affected if petrol becomes

scarce. We can draw a separate demand curve for motor cars only on the assumption that there would be no change in the supply conditions of petrol (or of any other accessory required for using a motor car). It is to be noted that Marshall's statement of the Law of Demand (and his concept of the Demand Curve) contains the qualification that, "other things remain the same."

There is another difficulty regarding complementary goods. When two goods X and Y are used together, is it possible to find out the marginal utility of each of them separately? Unless it is found we cannot apply the theory of value to complementary goods. According to the theory of value under perfect competition, price = marginal cost = marginal utility; therefore, marginal utility must be ascertained if the theory of value is to be applied.

Economists have suggested two methods of finding out marginal utility in such cases.

(i) Suppose that two goods, X and Y, are used jointly. It is generally possible to vary the proportions in which they are used. Suppose that X is increased by a small amount, keeping Y unchanged. The resulting increment of total utility is the marginal utility of X. The marginal utility of Y can be found by applying the same method. If the proportions in which the goods are used cannot be changed, even by small amounts, the method is not applicable.

(ii) Another method is to assume that the price and the supply conditions of other goods remain unchanged. Suppose that two goods, X and Y, are used together. Increase X by a small amount and use with it the *necessary* additional amount of Y. From the resulting increment of total utility, deduct the *total price* of the additional amount of Y which is used. The balance is the money value of the marginal utility of X. The same method can be applied to Y.

Both the methods are unsatisfactory. According to many modern economists, the demand for complementary goods should be analysed through Indifference Curves which would avoid the necessity of measuring the marginal utility of any of the goods.

The most important case of joint demand is the demand for the factors of production. Many factors must be used together for producing a commodity. The demand for each factor is related to the demand for the other factors.

While considering the demand for factors of production we must substitute the term Marginal Productivity for the term Marginal Utility. Factors of production are demanded because of their contribution to the total product. There are difficulties in finding out the marginal product of each factor. The methods, (i) and (ii) mentioned above, can be used in this case. (See Ch. 17). There is one general rule regarding factors of production. The quantity of each

factor used is extended to the point at which the marginal product of the factor is equal to the cost of the factor.

Derived Demand. The term Derived Demand is sometimes used to describe the demand for the factors of production. The demand for such goods is derived from the demand for the consumption goods which they help to produce. The value of such goods depends upon the value of the consumption goods which are produced.

Composite Supply. Different commodities satisfying the same want are said to be in composite supply. Composite supply commodities are *substitutes* of one another, e.g., tea and coffee, bus and tramway transport. The prices of substitutes move in the same direction. If the price of tea falls, some people will use tea for coffee. The demand for coffee will fall and its price will fall. Goods which are substitutable for one another are also called Competing Goods.

When a consumer uses two or more substitutable goods, he will adjust the amount of each goods in such a way as to get equal marginal utility from each. This follows from the Law of Equimarginal Returns. (See p. 106).

The marginal utility obtained from a commodity, which has substitutes, depends not only on the supply of that commodity but also on the supply of its substitutes. Hence, it is difficult to derive a separate demand schedule for a commodity with substitutes. The preference approach is more suitable for analysing the demand for such goods.

Composite Demand. If a commodity is demanded for more than one use, it is said to be in composite demand, e.g., electricity which is wanted for light, heat and also industrial power ; or, labour which is demanded in all industries. If the demand in any one use increases there will tend to be a rise of prices in all the uses of the commodity.

A commodity, with more than one use, will be distributed among its various uses in such a way that its marginal utility in every use is the same. This follows from the Law of Equimarginal Returns.

There is no difficulty, in theory, in determining the value of goods having many uses. The demand curve for such a commodity is obtained by adding up the demand schedules of its various uses. The demand curve with the supply curve determines value.

THE FUNCTION OF PRICES

In societies where production and trade are in private hands, consumers get goods and services by purchase in the market. Every article in the market has a price. To get the article, the consumer must be willing and able to pay the price. This is known as the Price System. The Price System is a characteristic feature of a

Capitalistic Economy as we find it in U.K. or U.S.A. In a Socialist Economy goods are distributed through a system of rationing according to quotas determined by public authorities. But even in a Socialist Economy a price system may exist, particularly in the case of consumer goods.

The pricing process. Under competitive conditions, the price depends upon demand and supply. The price moves up and down according to changes in demand and supply. Every upward movement reduces demand and makes producers eager to supply more. Every downward movement increases demand and makes producers reluctant to sell. Thus price-changes affect demand and supply in opposite ways. As a result of competition, the price fluctuates up and down, but always tends to move towards the point where demand is equal to supply. This is known as the "pricing process".

The Advantages of Pricing Process. The process of competitive pricing produces certain economic results. This is the function of prices. The results of the pricing process are enumerated below.

1. The price *adjusts supply to demand* and produces equality between the two.

2. Prices reflect the intensity of desire for a commodity. It is the *index of consumers' choice* and preferences. Commodities which are highly desired tends to have high prices. Commodities which are not so highly desired tends to have low prices.

3. Prices *indicate the cost* of making goods available to consumers. When the cost of production is high, the price also is high. When cost is low price tends to be low.

4. Price is the *distributor of income* among persons and groups. A person's income depends on the price that he can get for the services performed by him or the commodities supplied by him.

5. The most important function of pricing is the *allocation of resources between different uses*. Every commodity and service has a number of uses and the total available supply is never sufficient to meet all its uses. (When it is so, the commodity is a "free good" like air.) The function of prices is to reduce demand so that the commodity of service is available only for those uses where the utility obtained is high enough to equal the ruling price. Thus commodities and services are automatically available for their most desired uses.

The Evils of Pricing Process. The evils or disadvantages of the pricing process are stated below.

1. In a capitalist society, where there is great inequality of incomes, the pricing process *may operate inequitably*. In a capitalist society the highest bidder gets the goods. But the utility of the goods to him is not necessarily the greatest. Ability to bid high is evidence of riches, not necessarily of worth. A rich man will always outbuy a

poor man but the commodity concerned may be more useful to the latter than the former. The pricing process in a competitive society may therefore lead to maldistribution of resources both among producers and among consumers. The "allocation of resources" is not perfect.

2. *Prices do not always reflect the intensity of desire* for a commodity. A consumer may pay a high price for a commodity not because it is worth much to him but because of ignorance, inertia or seller's propaganda. The sale price of a commodity may be high not because its cost of production is high but because of monopolistic conditions.

3. The pricing process is *not accurate*, nor is it always beneficial to society.

IMPORTANCE OF THE "MARGIN"

The concept of the "margin" is very important in economic theory. Some illustrations are given below :

1. Price depends on marginal utility.
2. It is the marginal purchaser who influences prices.
3. Prices are determined by marginal costs, not total costs.
4. Substitution takes place at the margin.
5. It is only at the margin that there is elasticity.

The importance attached to the margin by economists has led some people to say that in economics, "the dog does not wag the tail, it is the tail that wags the dog". This remark is based upon a misunderstanding of marginal analysis. When the economist says that the marginal cost and marginal utility determine value, he means that there is a relationship between price, marginal utility and marginal cost and that, at equilibrium they must be equal to one another. *Where* the margin will lie will depend on the general conditions of demand and supply. Marginal uses and costs do not govern value. They are governed, with value, by the general relations of demand and supply. Margin is the point *at* which, not *by* which value is determined.

THE REPRESENTATIVE FIRM

The representative firm is a concept invented by Marshall to facilitate the study of *the costs which determine long term value in cases of increasing returns*. When increasing returns operate, the expansion of a firm leads to economies. Such economies enable the expanding firm to undersell many of the other firms in the industry. Thus the number of firms in the industry begins to fall and ultimately there is either monopoly or oligopoly. Competitive conditions

do not prevail any more. Under increasing returns marginal costs do not increase with expansion of scale and therefore there is, in theory, no limit to increase of output by the individual firm.

In Marshall's opinion competitive conditions may exist under increasing returns because all the firms in the industry are not able to grow simultaneously. Some grow while others decline on account of managerial difficulties, inertia and other reasons. The long run equilibrium price in such industries is not equal to the marginal costs of the growing firms or the declining firms but of that firm which *represents the conditions* generally prevalent in that industry. Such a firm is the Representative Firm. Marshall defined it as a firm, "which has had a fairly long life and fair success, which is managed with normal ability and which has normal access to the economies, external and internal, which belong to that aggregate volume of production". It is a firm which is representative of the industry and is not merely the "average" firm in it.

The idea of a representative firm is vague. Under increasing returns competitive conditions cannot exist in the long run. There will be monopoly or oligopoly and imperfect competition. In either case the concept is unnecessary.

Pigou introduced the concept of Equilibrium Firm to solve the problem of increasing returns and competition. When an industry is in equilibrium all the firms engaged in it are not necessarily so. The particular firm which is in equilibrium (whose marginal cost = price, average cost = marginal cost and marginal costs are not falling) may be called the Equilibrium Firm. According to Pigou the costs of the equilibrium firm determine value in the long run.

Marshall and Pigou did not think of imperfect competition and were therefore troubled with the problem of fitting increasing returns industries into their system of equilibrium economics. Modern writers have shown that there may be equilibrium under imperfect competition also. Hence, the concept of Representative Firm (and that of the Equilibrium Firm) are unnecessary. As Robbins puts it, "There is no more need for us to assume a representative firm, or a representative producer, than there is for us to assume a representative piece of land, a representative machine, or a representative worker".

CRITICISMS OF THE CURRENT VALUE THEORY

The theories regarding monopolistic competition and imperfect competition were worked out by Chamberlin and Joan Robinson in the early thirties of the present century. These theories are superior to the Marshallian theory of value which dealt only with perfect competition and pure monopoly. The new theories are nearer to reality because in actual life we find neither perfect competition nor

pure monopoly but various types of imperfect competition. But the Chamberlin-Robinson theories have been subjected to certain criticisms. The more important of these criticisms are mentioned below.

1. *Unrealistic.* Triffin¹ remarks that, "the present stage of pure theory appears undoubtedly very formal, lacking in concrete content and practical significance." The basic concepts of the theory of imperfect competition are unrealistic. Businessmen are not acquainted with the idea of marginal revenue and marginal cost. They could hardly form estimates of them even if they wanted to. Therefore no producer ever fixes his output on the basis of equalising the marginal revenue and marginal cost.

2. *The curves are subjective.* The average revenue curve is a subjective or an "imagined" curve. The curve is supposed to show the different quantities of a commodity which, the firm *thinks*, the consumers will purchase at different prices. The curve is not an objective curve showing the amounts *actually purchased*.

3. *Defective.* Mrs. Robinson² says that the short run price theory suffers from two defects :

(i) In times of strong demand, prices will not be raised to the full extent of the demand-price out of considerations for future.

(ii) Marginal Cost must be defined to include user-cost.

The prudent producer normally refrains from pushing output right up to the point where $p=mc$.

4. *Price=total cost.* According to a group of Oxford economists,³ the producers fix prices on the basis of the total cost of production and not the marginal cost of production. The reason is that producers do not know and cannot calculate, either marginal revenue or marginal cost.

5. *Partial analysis.* The current value theory lays down the equilibrium conditions of the individual firm, and of the industry or group. It does not deal with the interrelationship between different industries and groups. The current theory is, like the Marshallian Theory, a partial equilibrium analysis and not a general equilibrium analysis.

6. *Assumes profit maximisation.* The current value theory assumes that profit maximisation is the objective of entrepreneurial behaviour. In real life there exist various reasons which may induce the firm to sacrifice a part of the profits and charge a price which brings less than the maximum possible net revenue. Some of these considerations are mentioned below :

¹ Triffin, *Monopolistic Competition and General Equilibrium Theories*.

² "The Impossibility of Competition". Article in *Monopoly, Competition and their Regulation*, edited by Chamberlin.

³ Hall and Hitch in *Oxford Studies in the Price Mechanism*, edited by Wilson and Andrews.

(i) There are problems relating to production organisation and personnel management which cannot be solved by a mathematical formula.

(ii) There are firms whose ideal is long run security rather than immediate maximum profits. They will charge less than the maximum possible price.

(iii) There are firms which consider expansion an end in itself. They may sacrifice some revenue for the sake of power and prestige.

(iv) There are firms who take interest in general welfare.

Conclusion. For the aforesaid reasons, Taussig⁴ concluded that, "Business behaviour cannot be entirely explained in terms of cost curves and demand curves".

THE FULL COST THEORY OF PRICING

Origin. In 1938, two economists of the Oxford University, Hall and Hitch, sent out a list of questions to some manufacturers and businessmen asking them to state how they fixed the prices of their products. The answers disclosed the following facts :

(i) most of the firms had never heard of the terms marginal cost and marginal revenue ;

(ii) they did not aim at maximising profits by equating marginal revenue to marginal cost ; and,

(iii) they fixed prices on the basis of their total cost of production and not their marginal cost of production.

Summary. These findings led to the formulation of a new theory of pricing which is called the Full Cost Theory or the Normal Cost Theory. The substance of the theory is as follows.

1. The manufacturer first finds out the average variable cost of producing the commodity. This is called the Direct Cost. It is generally assumed that direct costs are proportional to output, *i.e.*, the average variable cost function is a straight line parallel to the output axis.

2. To the direct cost of production the manufacturer adds a certain percentage which is called the Costing Margin. This percentage is supposed to cover the fixed costs of production and the normal profits of the producer. Suppose that the direct cost of producing an article is Rs. 10 and that the manufacturer thinks that a costing margin of 20% will cover the fixed costs and his normal profits. He will then fix his price at Rs. 10 plus 20% of Rs. 10, which is equal to Rs. 10 plus Rs. 2, or Rs. 12.

3. The manufacturer will sell as much as is possible at the price calculated by adding the costing margin to the direct cost. So long as the prices of the direct factors of production (*e.g.*, raw materials) remain unchanged, he will not change his price.

⁴ Taussig, *Principles of Economics*, Vol. I.

Diagram. The Full Cost Theory can be illustrated by a diagram. In Fig. 58, AR is the average revenue curve. AV is the average variable or direct cost curve. CM shows total cost made up of direct cost ND and the costing margin DS. At price NS or PQ, the firm can sell OQ. The firm will ordinarily keep its price fixed at PQ and produce OQ.

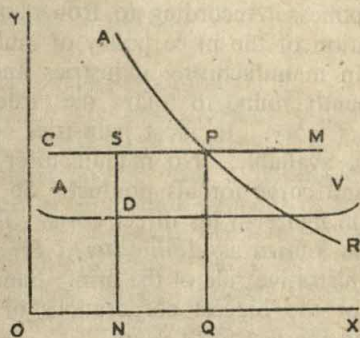


FIG. 58

Arguments. Hall and Hitch⁵ observe that firms, "do not aim, in their pricing policy at the . . . maximisation of profits by the equation of marginal revenue and marginal cost. They are thinking in altogether different terms; in

pricing they apply a rule of thumb which we shall call 'full cost', and that maximum profits, if they result at all from the application of this rule, do so as an accidental (or possibly evolutionary) by-product".

The following arguments are advanced in support of the view that pricing is based on the full cost principle.

1. It is regarded as conventional and proper. People think that price ought to be equal to the average cost of production.
2. Producers do not know the sales curve and the marginal revenue curve and therefore cannot base their price and output policy on them.

3. In many cases there are tacit agreements among producers to fix prices at a particular level. They avoid fixing prices at higher than cost because it will invite new entries and price cutting.

4. Frequent price changes are costly and troublesome. In the case of many articles there are conventional prices. Such prices are altered only when the cost of production changes.

Criticisms: The defects of the Full Cost Theory are mentioned below.

1. It ignores demand. According to this theory, price is determined by the total cost of production and demand has no influence. Experience shows that when demand rises, businessmen raise prices beyond the level of the cost of production.

2. The theory leaves many questions unanswered. For example, it does not give a satisfactory explanation of how the costing margin is determined.

⁵ *Oxford Studies in Price Mechanism* (edited by Wilson and Andrews).

Conclusion : The Full Cost Theory is not a popular one. Most of the leading economists have rejected it. According to some, the theory applies to some limited fields, like manufacturing industry and oligopolies. According to Robertson, the theory gives a better explanation of the price policy of multiproduct firms.

In manufacturing industries and some oligopolies, producers are frequently found to follow the "rule of thumb" suggested by the Full Cost Theory. In most industries accurate information about demand is not available. No manufacturer knows the exact shape of the demand curve for his product. So he fixes his prices by adding a certain figure to his direct costs. This is called *Mark Up Pricing*. It is also known as *Administered Price* because the price is fixed by an administrative rule of the firm. Samuelson⁶ notes that General Motors, one of the biggest corporations of U.S.A., has followed this system during the last forty years.

ECONOMICS OF PRICE CONTROL

When the supply of an essential commodity becomes scarce its price tends to rise very high. The producers of the commodity and middlemen holding stocks of it make large profits, but all other sections of the community suffer great hardship. The poorer classes either cannot buy it or are forced to pay so much that they have to curtail consumption of other essential goods. If the scarce commodity is an article like food or clothing, the cost of living rises, the labourers demand higher wages and industrial disputes arise. If the scarce commodity is a producer's goods like coal or iron, the production of other commodities is affected. This is particularly dangerous in times of war when munitions and other supplies are vitally necessary for reasons of security. It is therefore generally agreed that when prices of essential commodities rise too much, the State is justified in taking measures for fixing maximum prices.

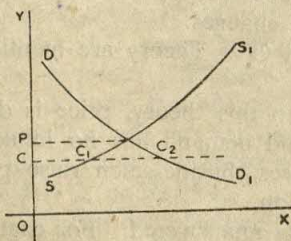


FIG. 59

Diagram. The effects of ceiling price regulations on the forces of demand and supply can be analysed as follows :

Let DD_1 and SS_1 be the demand and the supply curve of an essential commodity (say) sugar. The normal equilibrium price is OP . Suppose that, the Government fixes the ceiling price at OC . At this price, the total demand is CC_2 while the total supply is CC_1 . There is excess-demand amounting to C_1C_2 . The excess-

⁶ Samuelson, *Economics*, (9th edition), ch. 26.

demand will exert an upward thrust on prices. There will occur secret sales at prices higher than the ceiling price OC. Such secret sales at higher prices constitute what is known as the Black Market. "A legal maximum price, without rationing, leaves a gap between demand and supply."—Samuelson.

Difficulties. Price-control involves many difficulties :

1. *Determination of ceiling price.* The first problem is how to determine the ceiling price. Usually the ceiling price is made equal to the cost of production, including normal profits. But it is difficult to calculate cost of production. The cost of production depends upon the valuation of the fixed assets used in the manufacture of the commodity and such valuation gives rise to complex problems. The prices of raw materials and the wages of labour change during periods of scarcity and such changes must be allowed for by changing the ceiling price periodically. It is also difficult to determine what is reasonable profits.

2. *Enforcement.* It is difficult to enforce ceiling prices. Black markets inevitably arise. The government enforcement machinery is usually not sufficiently competent or honest.

3. *Hoarding and smuggling.* Hoarding and smuggling prevent the holding of the price line.

4. *Rationing.* Mere fixation of ceiling prices is not enough. Steps must be taken to ensure that the scarce commodity is really available to the persons who need it most. This is usually done through rationing.

Two methods might be adopted for preventing the emergence of black markets.

(a) *Strong and efficient enforcement.* The law enforcement machinery may be made very strong and efficient. Experience, however, shows that even in countries like U.K. and U.S.A. it is extremely difficult to enforce price regulations. Black markets always come into existence. A ceiling price law by itself, will result in a haphazard distribution of the commodity. At price OC the total demand CC_2 cannot be satisfied. Some men only will get the goods. Who will be those lucky persons? They may be the first comers or people standing at the head of the queue or the relative and acquaintances, of the stock holders or people prepared to pay some form of monetary or non-monetary consideration to him. The result would be that people who really need the commodity may have to go without it. Thus a ceiling price by itself cannot secure equitable distribution of the commodity.

(b) *Rationing.* The price regulation may be accompanied by rationing. In this case the amount which an individual can buy is fixed by law. The quota of each is calculated by dividing CC_1 (the amount available) by the number of buyers. Now the excess demand C_1C_2 is cut off. There is no pressure of excess demand on stocks and the price

remains at OC. This is subject to the assumption that, the quotas are carefully calculated and the administrative machinery is not dishonest. Thus, to be effective, price control must be accompanied by measures to reduce the demand through some form of rationing.

(c) *Legal steps.* The Government must take legal steps for preventing hoarding, black marketing and smuggling. The Government usually takes the aid of voluntary organisations.

THE "COB-WEB" THEOREM

In the case of certain commodities (mainly agricultural) the current year's production is influenced by last year's prices with the result that prices and output follow a cyclical pattern. This can be illustrated by diagrams as follows :

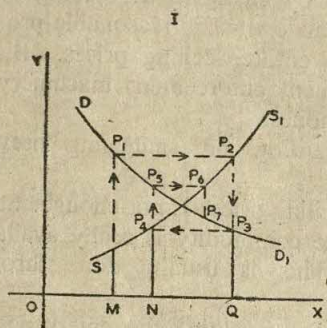


FIG. 60

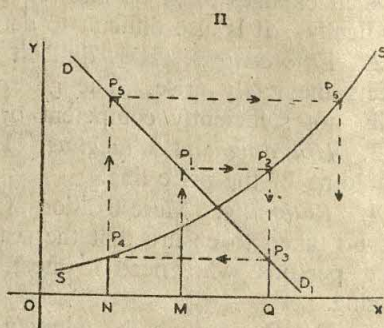


FIG. 61

Let DD_1 show at what prices the quantity produced in a particular year will be sold. Let SS_1 show the output which will be forthcoming next year at the different prices of this year. DD_1 and SS_1 are not the usual demand and supply curves but are specially drawn for the purpose. SS_1 shows supply with one year lag.

Suppose that in the first year OM is produced. The price will be MP_1 . This will lead next year to output OQ and price QP_3 . Price QP_3 will lead next year to output ON and price NP_4 .

If $OM=ON$ the cycle starts again. If ON is larger than OM as in Fig. 60 the price fluctuations become gradually narrower (following the path $MP_1P_2P_3P_4P_5P_6P_7$) and a long period equilibrium is possible. If ON is smaller than OM as in Fig. 61 the prices diverge wider and wider (following the path $MP_1P_2P_3P_4P_5P_6$). There can be no long period equilibrium in this case unless the curves themselves change shape.

It can be shown that if the slope of the supply curve is steeper than the slope of the demand curve, the cob-web oscillation will

converge to a point and there will be stable equilibrium (Fig. 60). In the converse case, the amplitude of the fluctuations will increase and there will be no equilibrium (Fig. 61).

These phenomena have been called the "Dynamic Cobweb".

EARLIER THEORIES OF VALUE

The earlier writers on the theory of value generally confined themselves to a discussion of influences that operate in the long run. Some of them also tried to determine what constitutes "natural value" or "the just prices". The earlier theories can be classified into three types (1) Utility Theories (2) Cost of Production Theories and (3) Labour Theories.

The Utility Theory. According to the exponents of this theory, value is determined by utility. In its crude form—"The higher the utility of a thing the greater is its value"—the theory is obviously untenable. Water has greater utility than diamonds but has less value. Jevons, Carl Menger and others put up an improved version viz., that value is determined by marginal utility. In this improved form the theory seems to explain value in the very short period when supply is fixed and in the case of non-reproducible articles. But it cannot explain long period value. The theory is one sided. It explains only demand, while value is determined by both demand and supply.

The Cost of Production Theory. According to Ricardo, Mill and others, value is determined by cost of production. This theory is rejected nowadays for the following reasons: (i) It ignores the influence of demand. In the very short period and in the case of non-reproducible articles the market value may be much higher or lower than the cost of production. (ii) The theory involves circular reasoning. The cost of production depends on the volume of output. The volume of output depends on the demand. Therefore cost of production depends on demand and cannot by itself determine value. (iii) The theory ignores the effects of monopoly and monopolistic competition. In such cases the price is not equal to cost of production.

Like the utility theories, the cost of production theory is one sided. Value is not determined by utility alone or cost of production alone but by both of them jointly.

The Labour Theory. According to the Labour Theory, the value of a commodity depends on the amount of labour required, or the toil and trouble undergone, in producing it. This is supposed to be the "natural" value of a commodity as contrasted with the "money-value" which is constantly changing. If this theory is accepted as correct, two consequences follow:

(a) The relative values of different commodities must depend on the relative amounts of labour contained in them.

(b) If labour alone creates value the whole of the price of the product should go to labour in the form of wages. In capitalist societies wages are always less than the value of product. The difference is taken by capitalists in the form of interest, rent and profits without any justification and is therefore a "theft" from the share of labour. This is the famous "Exploitation Theory" believed in by Proudhon, Karl Marx and others.

The labour theory of value is not accepted by modern economists for the following reasons.

(i) The term "labour" is vague. There are different degrees of toil and effort which cannot be reduced to a common measure. We cannot get rid of the difficulty by saying that value is determined by "socially necessary labour" for, how much labour is socially necessary for producing a thing depends on the demand for the thing.

(ii) The labour theory cannot explain relative values or the value of non-reproducible articles. If two equally efficient workers cultivate two equal areas of land with different fertility, the worker on the better land will produce the same amount as the other with less labour. But the price will not be different. As regards non-reproducible articles the labour originally spent on them is constant but the value of the articles may change. To explain value in such cases we must take into account demand or utility.

(iii) The labour theory does not explain the factors which influence the supply of a commodity. Value depends on scarcity. But the scarcity of a commodity may be due to lack of raw materials or resources. Things which are most scarce or most valuable are not necessarily things which require most labour to produce.

(iv) Labour alone does not create value. Saving, risk-taking or uncertainty-bearing are as much essential to production as labour.

The labour theory of value is important in as much as it draws attention to the grievances of labour and the injustices which it has suffered at the hands of the richer classes. But it is not acceptable as a scientific explanation of the problem of value.

RECOMMENDED READINGS

1. Ryan, *Price Theory*, Ch. 12.
2. Henderson and Quandt, *Microeconomic Theory*, Ch. 6.
3. Samuelson, *Economics*, (9th Edition), Ch. 20, 26, 32.

EXERCISES

1. Distinguish between 'joint demand' and 'composite demand'. What are the difficulties of price determination under conditions of joint demand?
2. How is the value of goods in joint demand determined? (G. U. & D.U. '69).
3. Indicate the circumstances in which price control and rationing are necessary in the interest of equity.
4. How are the prices of joint products determined in a perfectly competitive market? (C.U. B.A. '65).
5. Explain and discuss the action of the Price Mechanism in the economy. (C.A. May, '69).
6. Discuss the Labour Theory of value. What are its limitations? (C.A. Final May '73).

CHAPTER 16

SPECULATION

DEFINITION

Future Contracts. Speculation means purchase or sale of a commodity with a view to making profit from future price changes. Suppose that the price of a commodity is expected to go up. Many dealers will buy it, hold it in stock for some time and sell when price rises. This is one type of speculation. Another type of speculation occurs through what is known as Future Contracts. There are markets where contracts of purchase or sale may be entered into with the price agreed upon on the date of the contract but delivery to be taken or given at a later date. Such contracts are known as Futures.

When price rises. Suppose that the present price of a commodity is Rs. 50 per ton. If it is expected that the price will go up, many dealers will enter into contracts at Rs. 50 (or possibly higher) per ton to get an agreed quantity of it at a later date. If at the time of delivery the price is higher (say, Rs. 55) they will sell what they receive under their contracts and make a profit.

Selling short. If on the other hand, dealers expect the price to go down, they will enter into contracts to deliver the commodity at a future date at the current price of Rs. 50 or a little lower. If on the agreed date of delivery, the market price is lower (say, Rs. 47) the dealers will buy from the market and give delivery. As the contract price is higher than their purchase price, they will make a profit. A transaction for the future delivery of a commodity at a price lower than the current price is called "selling short."

Arbitrage. When the price of a commodity differs in different markets, expert dealers make a profit by purchasing in the low-priced market and selling in the high-priced one. Suppose that a commodity sells at Rs. 50 per ton in market X and at Rs. 51 per ton in Market Y. Dealers will buy in X and sell in Y. This is called Arbitrage. In the speculative markets, dealers buy and sell when they expect a difference between current prices and future prices. Speculation can therefore be also defined as "arbitrage through time."

Anticipation. The profits of speculation depend on the correctness of the speculator's anticipation. He gains if the price moves as he expected. If it does not, he loses. The speculator is therefore a professional risk-taker of future price-changes.

Speculation and Gambling. In genuine commercial transactions there is a promise to give delivery of the goods. A transaction becomes a gamble when there is no intention to give or take delivery. Suppose that a person buys a commodity at Rs. 15 per ton, delivery to be taken six months later. On the date of delivery the market price becomes Rs. 17. He has made a profit of Rs. 2 per ton. In a gambling transaction he will not take delivery of the goods but will receive the profits in cash from the other party to the transaction. If the price had fallen, he would have lost and would have paid cash to the other party. Transactions of this type are wagering agreements and are unenforceable by law. But if the loser pays the money voluntarily the law cannot interfere. There are always methods of getting round the law. An enormous volume of such gambling occurs in the so-called *phatka* markets of India.

Commodities Suitable for Speculative Dealings. A commodity must fulfil certain conditions before it can be dealt with in the speculative markets. (i) There must be a wide demand for it, otherwise the speculator cannot be sure of selling it in the future. (ii) The commodity must be capable of being identified by well recognised grades and standards, otherwise there will be uncertainties in all contracts relating to future delivery. (iii) There must be a regular supply of the commodity, otherwise the speculator cannot be sure of getting the goods in the future.

The staple commodities like rice, wheat, jute etc., and shares and debentures of companies fulfil all the above mentioned requirements and are regularly dealt with in the speculative markets.

BENEFITS OF SPECULATION

Speculators perform two very important functions : (i) they promote stability of prices and (ii) they reduce some of the risks of production. These are the benefits of speculation.

(i) *Promotes price stability.* Speculation promotes price stability by reducing the gap between supply and demand. If, at a particular time, there is an excess supply of a commodity and the price becomes low the speculator buys it, and holds it for sale in the future when the commodity will be in short supply. Such action reduces the *present* supply and prevents prices from falling as much as they would have, and increases the *future* supply thus preventing prices from rising then as high as they would otherwise have. Thus the range of price fluctuation becomes less.

There are many commodities which have seasonal variations in prices. Thus the price of potatoes tends to be low in November which is the time when the new crop comes into the market. Thereafter the price tends to rise and reaches a peak in July. Speculators buy

potatoes in November, keep them in cold storages and sell it later. This tends to reduce the range between the peak and the bottom prices. Thus speculation reduces seasonal fluctuations. In a similar manner it reduces all fluctuations which can be foreseen.

(ii) *Avoids risk.* Speculation reduces some of the risks of production by enabling manufacturers to buy the raw materials and supplies required in the future at current prices. A jute manufacturer, for example, requires raw jute all the year round but he does not know what the prices will be (say) six months later. In the futures market, however, he can buy jute for future delivery at a price decided upon now. Thus the risk of future price changes is eliminated. The manufacturer is also sure of getting his requirements in the future.

THE EVILS OF SPECULATION

The speculator specialises in risk-bearing. But his activities are beneficial only if he is well-informed and sound in judgment.

Speculation produces evil consequences under the following circumstances :

- (a) When it is not based on intelligent anticipation of future price-movements ;
- (b) when speculators indulge in malpractices ; and
- (c) when speculation degenerates into gambling.

The evils of speculation are enumerated below :

1. *Bad speculation.* Injudicious speculation may widen price-fluctuations and make production more risky. A good speculator should buy when prices are low and sell when prices are high. But all people who indulge in speculation in the stock and the produce exchanges do not possess sound judgment. Some may sell when prices are low and buy when prices are high. Such activities aggravate price-fluctuations and make production more risky.

2. *Dishonesty.* Speculators are sometimes deliberately dishonest. They spread false rumours and try to operate with inside information obtained by bribing directors and officials of companies. Sometimes they try to "corner" a commodity with a view to obtaining monopoly profits.

3. *Gambling.* Speculation of the gambling type, which is found in the stock exchanges, introduces additional risks for the investors. The proper function of a stock exchange is to ensure ready transferability of shares and increase the flow of capital into productive investment. But the operations of the gamblers in the Exchange cause share prices to move erratically. The value of shares fluctuate, not on the basis of their 'yield' but on speculative activity. This makes many investors nervous and checks the flow of capital into industry. Anything which checks investment also reduces employment because

employment depends upon investment. Stock exchange speculation (of the gambling type) is therefore harmful for the community. Lord Keynes¹ made the following remark about stock exchange speculation :

"Speculators may do no harm as bubbles on a steady stream of enterprise. But the position is serious when enterprise becomes the bubble on a whirlpool of speculation. When the capital development of a country becomes the by-product of the activities of a Casino the job is likely to be ill done."

4. *Inequality and instability.* In addition to affecting investments and employment, illegitimate speculation of the gambling type produces inequality and instability of incomes. Outsiders are often lured to share market speculation by the hope of making big gains but the usual and general consequence is loss of their savings.

Legitimate and Illegitimate Speculation. Speculation of the type which is beneficial to society is called legitimate speculation : speculation by ill-informed persons and by men attempt to rig the market is called illegitimate speculation. Illegitimate speculation is equivalent to gambling but legitimate speculation cannot be called gambling because it performs economic functions.

STOCK AND PRODUCE EXCHANGES

A Produce Exchange is a market where the staple commodities (wheat, cotton etc.) are bought and sold. A Stock Exchange is the market for company shares, stocks, and debentures. In both markets contracts are entered into for delivery on the spot or in the future.

The benefits of Stock Exchanges are as follows :

1. They facilitate the formation of new companies by providing a convenient market for the sale of their shares.
2. Through sales of debentures and new shares old companies, get finance when needed.
3. They ensure the ready transferability of shares so that liquidity is secured and the investor's capital does not remain blocked.
4. Dealers operating in the exchanges provide information to the public thereby facilitating the flow of capital into new investments.

The benefits of Produce Exchanges are as follows :

1. The buyers are sure of getting the goods at the cheapest possible price because there are numerous dealers and competitive conditions generally prevail. For the same reasons, the sellers also get a ready market at the best possible price.
2. The produce exchanges help the adjustment of supply to demand. The producers can plan their output policy on the basis of the price trends observable in the exchanges.

¹ Keynes, *The General Theory of Employment, Interest and Money.*

3. Transactions for future delivery help to maintain continuity of production.

4. Different produce exchanges are spread over the country but the prices in them tend to be uniform because whenever any price-difference appears, the dealers start buying in the low-priced market and selling in the high-priced one. This is called Arbitrage.

5. The exchanges ensure proper grading and standardisation of commodities.

6. The exchanges promote stability of prices. Shortages and surpluses due to seasonal variations of output tend to be balanced against one another through the dealings of the speculators.

There are, however, certain evils associated with the Stock and Produce Exchanges. They are as follows :

1. There occurs in them a considerable amount of *gambling*. Dealers enter into contracts not for actual delivery but for wagering on future price differences, the loser only paying to the other party the difference between the contract price and the actual price on the settlement day.

2. The gamblers frequently try to *manipulate the market* by spreading false rumours or forming alliances for cornering commodities and shares.

3. Gambling transactions sometimes cause *wide price fluctuations* which cause loss to genuine traders and innocent investors.

4. The concentration of marketing transactions in a particular place provides opportunities for *cornering* particular commodities and shares.

Conclusion. The evils of produce and stock exchange speculation have become so great in modern times that some people suggest the abolition of these institutions. The abolition of the exchanges will no doubt remove the evils associated with them but the cost will be rather high. We cannot afford to lose the services which they provide, *e.g.*, ensuring future supplies of raw materials etc. The evils of the exchanges should be removed by suitable legislative and other action.

CONTROL OVER SPECULATION

Legitimate speculation is advantageous to society and requires no control. But illegitimate speculation and gambling are evils which ought to be suppressed. Unfortunately no good way has yet been found of doing so. The official rules of almost all Exchanges provide for actual delivery of the goods and shares contracted for. Dealings in price differences, *i.e.*, 'margin' transactions are prohibited. But such rules cannot be strictly enforced. When parties secretly settle their transactions by the payment of differences, it cannot be found out. When people are intent on gambling against one another, methods can

always be found to evade the law. It has therefore been suggested that the best remedy for illegitimate speculation is building up public opinion against gambling transactions.

In some countries laws have been passed for the control of speculation. In U.S.A. there is an official organisation known as the 'Securities and Exchange Commission' which has power to regulate the business of trading in securities. All stock exchanges must be registered with the Commission, which is authorised to regulate their rules of trading so as to prevent abuses.

In India, the Forward Contracts Regulation Act provides for the regulation of forward contracts (other than those on stock exchanges) and prohibits options in goods, including bullion. Under the Act, forward contracts (other than non-transferable specific delivery contracts in commodities) are allowed to be entered into only in accordance with the rules and bye-laws of an association recognised by the government. All rules and bye-laws and changes therein require the previous approval of the government. The associations must furnish periodical returns and reports. A 'Forward Market Commission' has been created to advise the Central Government in the administration of the act, to undertake inspection of accounts and other documents of the recognised associations and to keep forward markets under observation and continuous study. The Forward Markets Commission of India is a departmental body subject to the control of the government and not an autonomous organisation like the Securities and Exchange Commission of U.S.A.

RECOMMENDED READINGS

1. Samuelson, *Economics*. (9th Edition), Ch. 4, Appendix, Ch. 21, Appendix.
2. Cairncross, *Introduction to Economics*, Ch. 10.

EXERCISES

1. What are the economic functions of speculation? Do you think it necessary to put restrictions on speculation? (C.U. B.Com. '61).
2. Discuss fully the advantages and disadvantages of speculation.
3. Discuss the role played by speculation in the modern productive organisation. (C.U. B.A. '65)

CHAPTER 17

THE NATIONAL INCOME AND ITS DISTRIBUTION

NATIONAL INCOME

Aggregate Income. The term National Income is used to denote the aggregate income of a country during a specified period, usually one year. The aggregate income of a country is, subject to certain corrections, equivalent to its aggregate output of commodities and services.

The aggregate output of a country may be expressed and evaluated in different ways. Hence, there are several *National Income Concepts*. They are explained below.

Gross National Product. The aggregate money value of all Final Products produced in a country during a year is called its Gross National Product or GNP. A Final Product is one which is available for immediate consumption or investment, e.g., a shirt or a sewing machine. The value of raw materials and other intermediate products are included in the value of the final products and are therefore not separately counted.

Suppose that a country produced during the year 1970, x units of rice, y units of coal, z units of medical services, etc. Suppose that the market prices of these products were a, b, c , etc. respectively. Then the GNP of the country during 1970 was $xa+yb+zc$, etc. (series to include *all final products*, both commodities and services).

The sum of the above series is called GNP *at market prices of 1970*. Instead of valuing the 1970 products at 1970 prices, we may value them at the market prices of an earlier year, say 1960. In such a case the total obtained is called *GNP of 1970 at 1960 prices*. The GNP of each of a number of years may be calculated at the market prices of a particular year. This procedure eliminates the effect of price changes and facilitates the comparison of the national income of different years. The GNP at the market prices of any year can be converted to GNP at the market prices of any other year with the aid of index numbers of prices.

The market value of a product includes the indirect taxes paid to the Government. Suppose that the cost of producing a dozen match boxes is 55 P and that the excise duty on them is 7 P. The market price of the dozen will be $55\text{ P}+7\text{ P}=62\text{ P}$. Hence, GNP at market prices = The total cost of production + Indirect taxes.

Therefore if we subtract the indirect taxes from the GNP at market prices we get the *total cost of producing* the GNP. Total cost of production = GNP at market prices — Indirect Taxes. The difference is called the GNP at *factor prices*. This is equal to the amount paid to the factors of production for producing the GNP.

The GNP is the aggregate value of the *current production* of goods and services. The GNP can therefore be classified into a number of items as follows :

GNP = Goods and services used by the Government (produced by itself and/or purchased in the market)
 + Goods and services purchased by consumers
 + Private Gross Capital Formation. (This is equal to the current output of machinery and equipment + net change in the stock of goods held by manufacturers and businessmen. The latter item is called Inventories.)

Goods and services are produced by the Government as well as by private enterprises. Hence,

GNP = Total Government Production (Public Sector output)
 + Total Private Business Output (Private Sector output).
 $GNP = G + C + I$

Net National Product. During the process of production the capital equipment of the country is gradually worn out. Some machines may also become obsolete. A certain part of the Gross National Product must be used for the replacement of worn out and obsolete capital goods. This part is not available for consumption or investment by the people. The GNP less the replacements is called the Net National Product or the NNP. The deduction for replacement is equivalent to what the accountants call Depreciation. Thus,

$NNP = GNP - \text{Depreciation.}$

For many purposes the NNP is a more meaningful concept than the GNP. Many writers use the term National Income to mean the NNP. Like the GNP, the NNP may be calculated at market prices or at factor prices.

When the NNP is being measured, account must be taken of (i) the international trade of the country and (ii) taxation and expenditure of the Government of the country.

(i) *International Trade* : The exports of a country constitute a part of the income of a country because they are paid for by foreigners. The imports, however, must be deducted from its income because they have to be paid for by its nationals. If the exports are larger than the imports, the difference must be added to the NNP. If the exports are less than the imports, the difference must be deducted from the NNP. The same considerations apply to international tran-

sactions other than commodity exports and imports. If a country receives payment from foreign countries on account of dividends or for shipping, banking or other services, the payments must be added to the NNP. If the country pays to foreigners on such accounts, the payments must be deducted from the NNP. In other words, the *net balance* from international transactions must be taken into account when evaluating the NNP of a country.

(ii) *The Government Sector*: The goods and services produced in Government enterprises must be considered part of the GNP and NNP if they are 'final' goods, *i.e.*, goods available for immediate consumption. If they are intermediate goods (*e.g.*, a raw material) they need not be taken into account, because their value will be included in the value of the final goods in the production of which they are used. The expenditure incurred by the Government for the payment of salaries to its officers is a part of the GNP and NNP because the services of the Government officers are part of the total quantity of services produced in the country during the relevant period.

Personal Income. In national income analysis, the term Personal Income is used to denote the aggregate money payments received by the individuals in a country. Personal Income is not equal to the NNP. The latter does not include transfer payments, like unemployment allowance or old age pensions for which no services have been rendered. The former includes such items because the money received on account of such items can be used by the individuals. Again, the NNP includes the undistributed profits of business units, because they represent a part of the current production, but they are not included in Personal Income because they are not available for use by the individuals. Hence it follows that,

$$\text{Personal Income} = \text{NNP} + \text{Transfer Payments} - \text{Undistributed Profits (including corporate taxes)}.$$

Disposable Income. The term Disposable Income denotes the actual income which can be used by individuals. Direct taxes (like the income tax) have to be paid out of the individual's personal income. Indirect taxes (like the excise duties) are included in the price of goods and services purchased by him. Therefore,

$$\text{Disposable Income} = \text{Personal Income} - \text{Direct Taxes}.$$

Since the income of the individual is spent partly on consumption and partly on savings, we can say that,

$$\text{Disposable Income} = \text{Consumption Expenditure} + \text{Savings}.$$

Per Capita Income. The National Income divided by the population of the country is called its *per capita* income or the average income per head. The *per capita* income is a rough index of the standard of living in the country because it shows the *average* amount

of income available to its citizens. It is, however, a very inadequate index. In most of the countries of the world the national income is distributed very unevenly among the people. The greater part of it goes to the richer classes. So, the majority of the people have incomes considerably less than what is shown by the figure for *per capita* income.

DEFINITION OF NATIONAL INCOME

There is a lack of uniformity as regards the use of the term National Income. In the Government statistics of many countries it is usual to consider the NNP as the National Income. Many economists also do so. But there are some who prefer to consider the GNP as the National Income.

Marshall. The concept of National Income was discussed by earlier writers. Marshall used the term National Dividend in the same sense as the term National Income. He explained the concept as follows : "The labour and capital of a country acting on its natural resources produce annually a certain net aggregate of commodities, material and immaterial, including services of all kinds. This is the true net annual income or revenue of the country ; or the national dividend." Marshall also observed that the national income is, "the aggregate net product of, and the sole source of payment for, all the agents of production."

Pigou. Pigou defined National Income in terms of money. According to him, the National Income is, "that part of the objective income of the community, including of course income derived from abroad, which can be measured in money."

Kuznets. According to Kuznets,¹ National Income is, "a summary and appraisal notion, rather than an analytical entity." The National Income is, "the end product of a country's economic activity, reflecting the combined play of economic forces and serving to appraise the prevailing economic organisation in terms of its returns."

Hicks. According to Hicks,² "The national income consists of a collection of goods and services reduced to common basis by being measured in terms of money."

Samuelson. Samuelson³ says that, "we give to the money measure of the over-all annual flow of goods and services in an economy. Often, instead of it, we use the almost equivalent precise term 'national product' or 'net national product' (NNP)."

¹ *Readings in the Theory of Income Distribution*, p. 3.

² J. R. Hicks, *The Social Framework*, Part IV.

³ Samuelson, *Economics*, p. 179.

National Income Committee of India, (1951)—"A national income estimate measures the volume of commodities and services turned out during a given period counted without duplication."

MEASUREMENT OF THE NATIONAL INCOME

The National Income can be measured by three methods :

1. The Commodity-Service Method.
2. The Incomes-Received Method.
3. The Consumption-Savings Method.

1. The Commodity-Service Method. Under this method the *net value* of all commodities and services produced in the country during a year are added up. The total obtained is called the *Final Products Total*. In order to obtain the figure, the production and trade statistics of the country are used. In most countries such statistics are available. $O=C+I$ (O represents total output.)

Precautions : When calculating the Final Products Total, certain precautions must be taken. They are as follows.

(i) To avoid double counting, intermediate goods must be excluded and only final goods must be taken into account. When the value of a chair is included, the value of the wood contained in it is automatically accounted for. Therefore, the value of wood (the intermediate product) is to be excluded and only the value of the chair (the final product) is to be included.

Suppose that a firm has produced furniture worth Rs. 10,000, using wood and other raw materials worth Rs. 6,000. Then the net value of the output of the firm is Rs. 10,000—Rs. 6,000=Rs. 4,000. In the national income figures we must include only Rs. 4,000. The raw materials, worth Rs. 6,000, are the output of other firms and will come in the national income figures as the output of such firms. If the *gross value* of each firm's output is taken, the value of raw materials will be included more than once. Therefore this is not done. Thus the net output of a firm means the value of its output *less* the materials purchased by it. This is also known as the *Value Added* by a firm.

(ii) New capital assets produced during the period under consideration must be included. They are saleable commodities during the period, although they will be used subsequently for production only.

(iii) The net payment from international trade (+or-) must be added to the value of the internal output.

(iv) Depreciation or replacement costs must be excluded.

The Commodity-Service Method gives us the money value of the net national product.

2. The Incomes-Received Method. Under this method the *net incomes* received by individuals and business enterprises in the country

during a year are found out and added up. The total obtained is called the *Factor Payments Total*. $Y=C+I$ (Y represents total income.)

Sources : In order to find the Factor Payments Total, statistics are collected from Government reports, tax returns and company reports. The earnings of the higher income groups can be obtained from the data gathered by income tax authorities. Those of the lower income groups can be obtained from census reports and from special studies of occupational groups.

Precautions : When calculating the Factor Payments Total, the following precautions must be taken :

(i) Only the *net incomes* of individuals and enterprises are to be included. The *gross* income includes wage payments and other outgoings which will appear as the income of some other individual or enterprise. Hence if gross incomes are included there will be double counting.

(ii) *Transfer payments* must not be counted as income. If a man sells his house, the purchase price is not income ; it is a transfer payment which represents no addition to the national output. Similarly, the income of a beggar, or relief payments like old-age pensions, must not be counted as income because they are obtained gratis without producing anything. The rule is : only those payments are to be included which represent "a cost payment to a factor of production for a contribution towards production". Only such payments are connected with the production of some commodity or service.

(iii) Payments due to the employer's *own factors* (e.g., his own land) must be counted on the basis of the market price for their use provided they enter into the cost of production of some commodity.

(iv) Goods and services for which no money payment is made must not be counted (e.g., the work of the housewife or the produce of a man's garden which is not sold in the market). Logically these items ought to be counted but it is not done because there is no convenient method of measuring the value of such goods and services.

(v) Sometimes a part of the profits of business enterprises are kept in reserve and not paid out as dividend. Such undistributed profits must be included in the national income accounts because they represent income earned during the period under consideration.

3. **The Consumption-Savings Method.** This method proceeds upon the basis that total expenditure of the community on consumption plus the aggregate savings must be equal to the community's total income. We can calculate the total income by finding out and adding up the total consumption expenditure and the total amount of savings during the period under consideration. Since savings ultimately equal Investments, this method may also be called the Consumption-Investment Method. $Y=C+I$.

Evaluation of the Three Methods. The Consumption-Savings Method is not generally used because the necessary data cannot be easily obtained. The data for the other two methods can be obtained more easily and both the methods are in general use for national income analysis. Figures for consumption and savings can be derived from the production and income figures. If consumption and savings or investment figures are available independently they can be used for checking the correctness of the totals otherwise derived.

The national income can be considered from two points of view :
 (i) as the sum total of the goods and services produced in a country during a certain period (the *flow of goods and services*) and (ii) as the sum total of the payments made to the factors of production for their services in production (the *flow of earnings*). The former is called the Final Products Total and the latter is called the Factor Payments Total. The two aggregates must be the same because income is earned by producing output and the value of the total output must be equal to the total income.

The total value of a product

=total rent+total wages+total interest+total profits

=the total payments to the factors of production.

Hence, the Aggregate Value of the National Output

=the Aggregate Income of the Factors of Production.

The national income can be measured either by adding up the value of goods and services produced or by adding up the money incomes earned by the factors of production. Both methods will yield the same result provided adequate precautions are taken. (See above). Statisticians usually combine the two methods. In certain sectors of the economy it is easier to find the value of the goods produced (*e.g.*, agriculture or mining) and therefrom calculate the income of the factors, while in other sectors it is easier to find out the income of the factors and therefrom calculate the value of the goods and services produced (*e.g.*, the different professions like medicine, law etc.).

UTILITY OF NATIONAL INCOME ANALYSIS

Social Accounts. The National Income of a country is the sum total of the products (or the earnings) of the different sectors of the economy. Its component parts are agricultural incomes, industrial profits, wages of labour, professional incomes, earnings from foreign trade etc. The statistics relating to the National Income contain estimates of the value of all the component parts. They also show how the earnings of the different sectors are related to one another. Hence National Income statistics constitute the "accounts" of the economy. They are called the Social Accounts. "These accounts form a double entry system of recording economic transactions in

terms of which the economy of a nation can be studied as a whole made up of parts".¹

Social accounting is very useful because it shows how complex concepts such as the national totals of income, product, and expenditure can be built up from simpler constituents like the income of particular groups of people, products of particular industries, and transactions of international trade. The constituent elements are related to one another in definite ways and each particular account can be used to check and verify the correctness of other particular accounts and of the national totals.

Uses. The National Income data can be utilized for *many useful purposes*. Social accounts of different years show relevant economic quantities like industrial production, savings, domestic capital formation etc., are changing. The changes show how the economy is developing and the State is able to lay down the appropriate economic policy necessary under the circumstances.

From statistics of the national income of a country it is possible to chart cyclical movements, find out the inflationary gap, measure economic growth and development, and evaluate its material standard of living in comparison with other countries and other time periods. Some of the various purposes for which the national income data can be used are mentioned below.²

1. *Inflationary or deflationary pressures* can be estimated with the aid of national income figures. The inflationary and deflationary gaps are differences between anticipated expenditure and available output. They are "inconsistencies of certain subtotals" in the National Income statistics. (See Ch. 27).

2. Fiscal policy measures can be tested for the presence of quantitative absurdities. Hidden inconsistencies in any forecast can thereby be exposed.

3. National income figures can be used *to forecast* the level of business activity at later dates and *to find out trends* in other annual data.

4. The national income data are useful in giving a correct sense of proportion about *the structure of the economy*.

5. In wartime the study of the product-components of the national income is very important because they show the *production possibilities* of the country.

6. The national income data can be used to determine the *allocation of revenues* and "aids" between different political subdivisions of

¹ Burdett, *Economic Journal*, 1954.

² Shoup, *Principles of National Income Analysis* and article in Ellis, *Survey of Contemporary Economics*.

the country. The 'aid' may be proportional to the 'income' of the local area to be aided.

7. National income data can be used to determine how an international financial burden should be apportioned between different countries. The national income is a *possible tax-base*. The quantum of national income measures the ability of a country to pay contributions for international purposes, just as the income of an individual measures, his ability to pay for the upkeep of his country.

8. The national income data are indispensable for *economic planning*. The development plans of a country must be based on an appraisal of existing resources and an accurate diagnosis of deficiencies. These things can be found out from the national income data.

9. Prof. Leontief has evolved a method of studying the structure of an economy by analysing the relations between the *output* of an industry and the *inputs* of other industries. Such an analysis must be based on the national income data.³

Conclusion. For the reasons mentioned above, national income analysis is considered very important. In U.K., U.S.A. and other advanced countries there are elaborate arrangements for the collection and analysis of statistics relating to national income.

DIFFICULTIES AND LIMITATIONS OF NATIONAL INCOME ANALYSIS

There are certain *difficulties in the measurement* of the national income. They are mentioned below.

1. The national income must be *calculated in terms of money*. But there are certain things (very useful to the community) which are not exchanged for money. Some typical examples are the following : unpaid personal services like those of a housewife for her family ; services that a man does for himself ; free services obtained from the Government or local authorities, like toll-free bridges ; hobby products like pictures painted for amusements ; goods consumed by people producing them, *e.g.*, farm products eaten by the farmer. Items, like those mentioned above, cannot be valued in terms of money and have to be excluded from the national income estimates. Their omission involves an *undervaluation of the national income*.

2. The measurement of the national income in terms of money leads to *queer results* in certain cases. If a man employs a house-keeper, her salary enters into the national income figures. If subsequently he marries her, the national income will be reduced because he will no longer pay any salary to her.

³ Leontief, *Structure of the American Economy*. A Ghosh, *New Horizons in Planning*.

3. Incomes obtained from *illegal activities* are not included in the national income (unless income tax is paid thereon) *e.g.*, production of illicit liquor or gambling. But the products of such activities are wanted by the consumers and have utility in the economic sense. The exclusion of such items results in an undervaluation of the national income.

4. Difficult problems arise regarding the treatment of government expenditure and taxation in *statistical computation*. Opinions differ among statisticians regarding these matters and different solutions have been adopted in different countries.

5. *Statistics are not always accurate*. Parts of official statistics, even those of advanced countries are based on guesswork.

6. When comparing the figures of different years, *adjustment* has to be made *for changes in the price level*. For this purpose, index numbers of prices must be used. But index numbers are not always accurate.

Regarding *the use of national income estimates*, the following further points are to be noted.

1. The national income *figures of different countries are*, strictly speaking, *not comparable*. Consumer preferences and needs are different in different countries. The price levels vary. Methods of computing the national income are not the same in all countries. For example, there are significant differences between the British and the American methods of dealing with Government expenditure in the national income accounts.

2. The national income, computed in terms of money, shows the amount of output but *does not show* the efforts or sacrifice of leisure or *the real cost of producing the output*. Also, it does not show the benefit obtained from natural amenities (*e.g.*, sunshine or the climate) the amount of which differs from country to country.

3. The national income total, by itself carries no message. The total is meaningful only when we take into account the price level, the nature of the goods and services produced and the needs and requirements of the people of the country. But one can compare the figures of different years and draw meaningful inferences. Hence, national income totals and subtotals are useful only as *relative, and not as absolute data*.

Conclusion. For the reasons stated above, some economists are of opinion that national income estimates have little, if any, value as indicators of material welfare or productivity. This view, however, exaggerates the difficulties involved in national income analysis.

Many economists think that the figures of national income should be adjusted so as to give it a meaningful measure of growth and the

economic welfare of the community. Samuelson¹ says that, "Our adjustments to GNP fall into three general categories : reclassification of GNP expenditures as consumption, investment, and intermediate ; imputation for the services of consumer capital, for leisure, and for the product of household work ; correction for some of the disamenities of urbanization."

FACTORS DETERMINING THE SIZE OF THE NATIONAL INCOME

As between different countries the size of the National Income varies greatly. The developed countries of the world (*e.g.*, U.S.A. and U.K.) have national incomes many times larger than those of undeveloped and underdeveloped countries like India or Indonesia.

The size of the National Income of a country is determined by the following factors.

1. *Natural Resources* : Nature supplies the main ingredients of wealth production. Countries having sufficient land, fertile soil, necessary minerals like coal and iron, power resources etc., have the necessary potential for a high national income. Countries having poor natural resources usually have low national incomes. The natural resources must, however, be properly utilised. There are many countries which have abundant natural resources but which remain poor because they are unable to utilise the resources properly owing to lack of knowledge or lack of organisation. This is the situation in most of the underdeveloped countries of the world.

2. *Labour* : Labour is required for the production of wealth. The workers must be reasonably efficient. There must also be an adequate number of workers. From the standpoint of the *per capita* income of a country, underpopulation is as bad as overpopulation. In an underpopulated country, the natural resources are inadequately utilised owing to lack of labour. In an overpopulated country, the *per capita* income is low because there are too many shares of the total income.

3. *Capital* : Efficient production is impossible without up-to-date machinery and equipment. The national income of underdeveloped countries is low because of lack of capital. The rate of capital formation in a country should be high enough to promote rapid growth.

4. *Organisation* : Skilled management is necessary for a high level of production. In all high-income countries efficient leadership is available for industrial organisation.

5. *The Social and Political Structure* : Social and political institutions may retard economic development or accelerate it. In underdeveloped countries there exist many barriers to progress. For

¹ Samuelson, *Economics*, p. 195.

example, the caste system and the joint family system in India put obstacles upon enterprise and initiative. Democratic institutions are conducive to a high national income. The political structure of a country is also important from the standpoint of efficient production. The existence of law and order and a sound and incorruptible administration are factors which promote economic development and bring about a high level of national income.

DISTRIBUTION OF THE NATIONAL INCOME

The subject matter of the branch of Economics known as "Distribution" is to analyse how the National Income is divided among the various sections of the community. The division may be analysed with reference to the factors of production or with reference to the individuals composing the nation. The first type of analysis is called Functional Distribution. The second type of analysis is called Personal Distribution. (Distribution, in this context, does not mean 'marketing'.)

Functional Distribution is a study of factor-incomes : how much is earned by each factor of production, land, labour, capital and organisation. The income of a factor of production is equal to the price that it can get for its services. Therefore, Functional Distribution can also be described as a study of the pricing of productive factors. Therefore, $Y = \text{Rent} + \text{Wages} + \text{Interest} + \text{Profit}$.

Personal Distribution is a study of how much is earned by individuals. Individual incomes cannot be explained adequately by applying the theory of value. The income earned by an individual depends not only on the value of the services performed by him but also on the prevailing rules regarding ownership of property and inheritance, the nature of the social structure and the distribution of political power. Personal distribution is a complicated subject. Economists generally confine themselves to a study of relative incomes (inequalities of income and wealth etc.).

Level of National Income—See Ch. 33.

THE MARGINAL PRODUCTIVITY THEORY OF DISTRIBUTION

The Theory. The Marginal Productivity Theory of Distribution provides an explanation of how the income of a factor of production is determined. The theory was developed by J. B. Clark, Wicksteed and others during the last quarter of the 19th century. J. B. Clark observed that, "the distribution of the income of society is controlled by a natural law and this law, if it worked without friction, would give to every agent of production the amount of wealth which that agent creates."

(i) We can assume that a *small* increase in the amount of a particular factor (without any change in the other factors) will not disorganise production and will produce a *small* increase in the output, at least up to a point.

(ii) We can assume that the cost of all factors, other than the one under consideration, is independently known. On this assumption we can impute a certain productivity to the variable factor. Thus, if three factors, X, Y, Z, are used in production, we can assume that,
 Net Product of X = Total Revenue — Cost of Y and Z.

Diagrammatic Representation of MRP.¹ Let OX represent units of a particular factor of production (say X), used in a firm. Imagine that X is varied, while all other factors used with it are kept constant. Then for different amounts of X the firm will get different outputs which will produce different revenues. Divide the total revenue obtained, when a particular quantity of X is used, by the number of units of X. The quotient is called the Average Gross Revenue Product AGRP. Thus in Fig. 62 when ON of X is used,

$$\text{Total Revenue} \div \text{ON} = \text{PN}.$$

For different positions of N we will get different positions of P. The locus of P is the Average Gross Revenue Product Curve AGRP.

The AGRP at a particular point is the joint product of all the factors used. From it we can derive the productivity of the variable factor X if we assume that the costs of the factors other than X are independently known. We can then say that,

Total Revenue (at N) — Total Cost of Factors other than X = Total Net Revenue attributable to X.

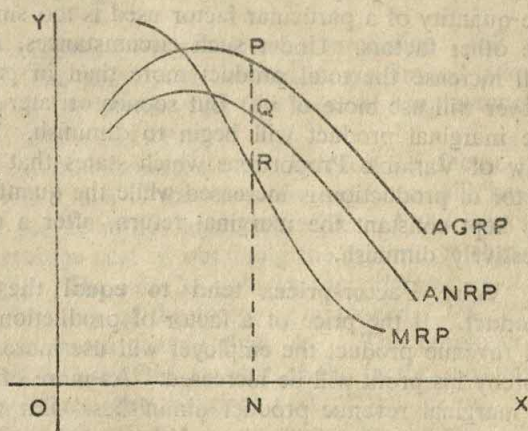


FIG. 62

Dividing the Total Net Revenue of X by the number of units of X we get the Average Net Revenue Product of X i.e., ANRP.

In Fig. 62, when ON of X is employed NP is the AGRP and NQ is the ANRP as defined above. The locus of Q is the ANRP curve.

¹ Robinson, *Economics of Imperfect Competition*, Chs. XVII, XVIII, XXI, XXII.

The shape of the AGRP and the ANRP curves can be deduced from the Law of Variable Proportions. The law tells us the effect of changing the quantity of a particular factor while the other factors are kept constant. Under such circumstances the marginal return obtained from the variable factor *may* increase in the early stages but it is bound to fall after a time. It follows therefore, that both the AGRP and ANRP curves are 'hunch-shaped', rising at first but falling ultimately.

The Marginal Revenue Product is defined as the change in the total net revenue of a factor brought about by changing the quantity of the factor by a small amount. The MRP curve, in Fig. 62, shows the Marginal Revenue Products at different points while the ANRP curve shows the average Net Revenue Product at different points. The MRP curve is related to the ANRP curve in the same way as the marginal cost curve is related to the average cost curve. (See p. 135). The MRP curve lies above the ANRP curve so long as the latter is rising and below the ANRP curve when the latter is falling.

The Principle of Diminishing Marginal Productivity. It can be laid down as a general rule that the marginal productivity of a factor of production diminishes as the quantity of the factor used increases. This proposition may not be true in the initial stages when the quantity of a particular factor used is too small in comparison with the other factors. Under such circumstances, increase of that factor will increase the total product more than in proportion and the employer will use more of it. But sooner or later a time will come when the marginal product will begin to diminish. This follows from the Law of Variable Proportions which states that if the quantity of one factor of production is increased while the quantity of the other factors are kept constant the marginal return, after a certain stage, will progressively diminish.

Why Factor-prices tend to equal the Marginal Revenue Product. If the price of a factor of production is less than its marginal revenue product the employer will use more of this factor, because thereby his profit will be increased. As more of the factor is employed its marginal revenue product diminishes. But the employer will gain by using additional quantities of the factor until the marginal revenue product of the factor is equal to its price. *The employer's earnings will be maximum at this point.* Beyond this point the marginal revenue product is less than the price and the employer will suffer loss if he uses more of the factor. The conclusion therefore emerges that the employer will adjust the volume of employment of a factor of production in such a way as to equalise the marginal revenue product of the factor with the market price of the factor. This rule applies to every factor of production used by the employer.

The Marginal Productivity Theory can be illustrated diagrammatically as follows.

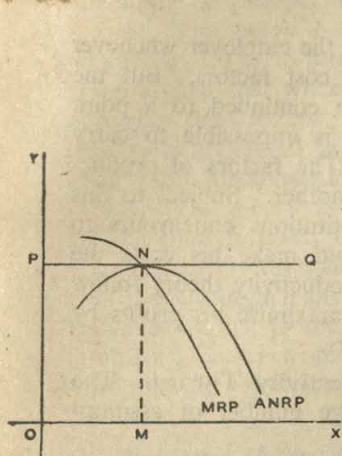


FIG. 63

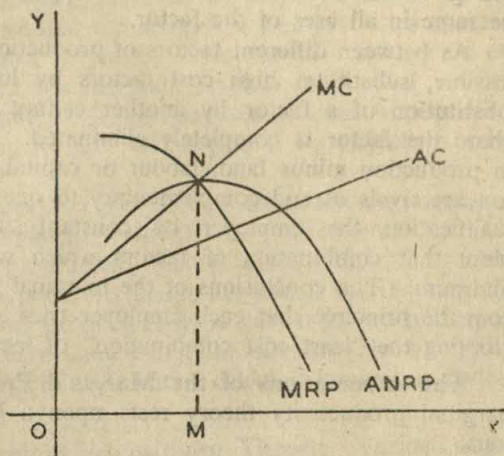


FIG. 64

In Fig. 63 and Fig. 64, ANRP is the Average Net Revenue Product Curve and MRP is the Marginal Revenue Product Curve of factor of production.

Fig. 63 shows the conditions under perfect competition. OP is the price of the factor. The employer's revenue is maximised when he employs OM amount of the factor. At this level of employment, the price of the factor = $MRP = ANRP$.

Fig. 64 shows the situation where the market for the factor in question is imperfect. When this is the case the employer will have to pay at a higher rate for securing larger quantities of the factor. The line AC shows the average cost of obtaining the factor. It slopes upwards towards the right. The line MC shows the addition to the total cost when a larger quantity of the factor is employed. MC will slope upwards to the right more steeply than AC. The employer's revenue is maximum when he uses OM amount of the factor. At this level, marginal revenue product = the marginal cost of the factor.

The employer's demand for a factor is determined by the marginal revenue product of the factor. Therefore, MRP is the firm's demand curve for the factor of production.

How the Principle of Substitution Operates. The principle of substitution operates—(i) as between different units of the same factor of production, and (ii) between the different factors of production.

Units of a factor of production tend to move from an employment where the marginal product is low to an employment where it is high. If perfect mobility exists (under perfect competition it is

assumed to exist) the marginal product of a factor of production, through transfer of units from one employment to another, becomes the same in all uses of the factor.

As between different factors of production, the employer whenever possible, substitutes high cost factors by low cost factors. But the substitution of a factor by another cannot be continued to a point where the factor is completely eliminated. It is impossible to carry on production minus land, labour or capital. The factors of production are rivals of and complementary to one another. Subject to this qualification, the employer by constant substitutions endeavours to adopt that combination of factors which would make his costs the minimum. The conclusions of the marginal productivity theory follow from the principle that each employer tries to maximise his profits by adopting the "least cost combination" of factors.

The Assumptions of the Marginal Productivity Theory. The marginal productivity theory rests upon a large number of assumptions.

1. The theory assumes that the employer is able to *measure and predict the marginal productivity* of a factor. Exact knowledge of marginal productivity is necessary to determine the profit maximising volume of employment. Such knowledge may of course be obtained through a process of trial and error.

2. The theory assumes that the *proportions between the factors used may be altered* if necessary. Variation of factor proportions may be needed to determine the best profit volume of employment. Generally speaking such variations are possible.

3. The theory assumes *full and free competition* between employers. The marginal productivity theory was originally built up on the assumption of perfect competition. The existence of perfect competition ensures that every factor gets its marginal product.

4. The theory assumes that the factors of production are *perfectly mobile*. If a factor is immobile it may be paid less than its marginal product because it will be unable to move away to another employment. Thus mobility guards against exploitation.

5. The theory assumes that the different units of a factor of production are *homogeneous and perfectly substitutable* for one another. This assumption is necessary to explain why all units of a factor are paid at uniform rate (the rate which is equal to the marginal productivity).

6. The theory assumes that the *Law of Variable Proportions* is in general operation. The Law explains why factor use is governed by the principle of diminishing marginal productivity.

7. The theory assumes *full employment*. If some units of a factor are unemployed, they will offer their services at a price lower

than their marginal product. Hence factor remuneration will equal the marginal product only when there is full employment.

8. The theory assumes that the individual firm is always operated in such a way as to *maximise its profits*. Only on this assumption can it be argued that whenever the marginal revenue product of a factor is higher than its cost, more of it will be used. Some writers claim that entrepreneurial action is very often guided by objectives other than profit maximization.

9. The theory assumes that *payment to each factor according to its marginal product, completely exhausts the total product*. The founders of the marginal productivity theory found it difficult to show that if the marginal products of the factors are added up, the sum will be exactly equal to the total product. This is known as the 'adding up problem'. Later writers have shown that the equality can be proved with the aid of a theorem of differential calculus known as Euler's Theorem.¹

Criticism of the Marginal Productivity Theory. Various objections have been raised against the marginal productivity theory of distribution. They can be summarised as follows :

1. It is almost *impossible to find out the separate product* of a factor of production because the final product is the joint product of all the factors. This criticism can be avoided by defining the term marginal product in a suitable way. Although the product of a particular factor is not physically separable we can "impute" a separate productivity to each factor by the method of marginal analysis or by using the concept of marginal net revenue productivity.

2. Hobson argued that the *proportions* in which the different factors can be used *are fixed by technical considerations* and cannot be altered. This criticism is not correct, because the proportions can usually be altered, at least in the long period.

3. The theory assumes that factors of production can be *varied by addition or subtraction of small quantities*. This assumption fails if a particular factor is large, indivisible or lumpy. The method of marginal analysis fails in this case.

4. The theory assumes that entrepreneurial behaviour is guided by the *objective of profit-maximization*. In actual life we find entrepreneurs guided by a variety of objectives. (See p. 229).

5. J. B. Clark and Wicksteed developed the theory on the *assumption of perfect competition*. Some writers object to the theory on the ground that perfect competition is not found in real life. But Chamberlin has shown that the marginal productivity theory can be applied to imperfect competition. Under imperfect competition the

¹ Stigler, *Production and Distribution Theories*, Ch. XII.

price of a factor tends to equal its marginal revenue product and not the marginal value product.

6. The marginal productivity theory takes *no account of the forces which influence the supply of a factor of production*. The marginal productivity of a factor determines the demand for it. But demand alone does not determine price. The price of a thing is determined by both demand and supply.

7. The marginal productivity theory of distribution is sometimes used to *justify the present unequal distribution of the national income*. According to this theory each factor gets what it produces. The rich get high incomes because they contribute more to production, the poor get less because they contribute less. "The rich are rich because they are good, the poor are poor because they are bad." Such a view entirely ignores the difference between personal distribution and functional distribution. High personal incomes are, in the majority of cases, due to inheritance and property laws; only in a very few cases are they due to individual worth. Conversely poverty may be due not to inefficiency but to misfortune and inadequate opportunity. In any case, high incomes cannot be justified on the ground of productivity because, as Clay puts it, "the market value by which this productivity is measured bears no constant relation to social service."

Conclusion. The marginal productivity theory was very popular during the early part of the 20th century. Nowadays it is thought that the theory is inadequate. According to Benham, it is useful as a first approximation but it is micro-economic theory and needs to be supplemented by a general theory of employment and output such as that of Keynes. According to Samuelson, the marginal productivity theory is simply, "a theory of one aspect of the demand for productive services by the firm".

DISTRIBUTION UNDER IMPERFECT COMPETITION

Under pure competition when the quantity of a particular factor of production is increased by a small amount the resulting increase of output (the marginal product) can be sold at the same price as before. So it is *possible* for the employer to pay to the productive factor the whole value of the net marginal product. But under imperfect competition the situation is different. When output increases, the price falls. The production is now sold at a lower price. Therefore it is impossible for the employer to pay to the productive factor the full value of the marginal product. Conversely, a reduction of output increases price and enables the employer to pay more than the value of the marginal product. In the former case, there is 'exploitation' of the productive factor because the factor gets less than the marginal product. In the latter case the employer and the productive factor together 'exploit' the consumer.

In actual life perfect competition is rare. There are monopolistic institutions which fight against one another to increase their own shares of the total income. The institutions which modify competitive distribution are principally Trade Unions and Monopolies, Combines and Trusts. State interference, socialistic or semi-socialistic, may affect the incomes of particular groups of people and thereby affect the distribution of wealth.

The existence of monopolistic institutions introduces an element of indeterminateness in the theory of distribution. The general principle, regarding the pricing of a productive factor, has to be restated in this form : the earnings of a factor, in the long run, will not exceed its *marginal product* and cannot fall below its *marginal supply price*. Its actual earnings will vary between these limits according to legal and institutional factors like the following,

- (i) statutory limitations on earnings such as those imposed on moneylending or payment of dividends ;
- (ii) legislation regarding minimum wages ;
- (iii) monopoly power of employers and trade unions ;
- (iv) relative bargaining power of employers and workmen.

Kalecki¹ has built up a theory of distribution based on the concept of the *degree of monopoly power*. He has tried to show that, "the relative share of gross capitalist income and salaries in the aggregate turnover is with great approximation equal to the average degree of monopoly". Kalecki's theory is useful in explaining a fact observed by statisticians, viz., the constancy of the share of labour in the national income of Great Britain and U.S.A. Between 1911 and 1935, the workers of Great Britain obtained each year about 40% of the national income. The share did not vary much from year to year. In U.S.A. similarly the percentage was fairly constant at about 35% during the same period. According to Kalecki, the share of labour remained constant because the average degree of monopoly was more or less constant during these years in those countries. (Bowley's Law.—p. 278.)

Macro Theories of Distribution : The distribution of the national income may be discussed with the aid of macro concepts like total savings, investment and output. In recent times Kaldor, Kalecki and others have tried to show that the shares of capital and labour in the national income depend on aggregate investment, the relative propensity to consume and similar factors. These theories assume *imperfect competition*. They are based on the General Theory of Employment developed by Keynes.

¹ Kalecki, *Essays on the Theory of Economic Fluctuations, and Economic Dynamics*.

INCOME OF A PARTICULAR FACTOR OF PRODUCTION

The earnings of a particular factor of production, e.g., labour can be increased under the following circumstances :

1. *Diminution of supply* : If labour becomes more scarce, its productivity at the margin will be raised and its earnings will increase. But if a large supply of the factor is required for economic development, scarcity of the factor will reduce the total volume of earnings.

2. The supply of the other factors may increase, reducing their productivity and increasing the demand for the factor in question.

3. If the demand for the factor is elastic, increase of supply may increase total earnings and consequently average earnings. For example, if workers work harder, faster or longer hours, the total supply of work will increase and if in that society the demand for labour is elastic, the total wage bill and individual wages will increase. If the demand for the factor is inelastic, the total earnings will increase if the supply is restricted.

4. If the efficiency of the factor increases, its marginal product will increase and so also its earnings.

5. Increase in the productivity of the other factors may lead to an increase of the total output and the share of the particular factor.

6. Increase in the bargaining power or monopoly power of a factor will generally lead to increased earnings.

INEQUALITY OF INCOMES

The distribution of income (and wealth) is extremely unequal in all capitalistic societies. A few rich persons own most of the property and get the major share of the national income. The masses live in poverty.

Causes. Inequality of income (and wealth) is principally due to the following factors :

1. *Differences in Ability* : People with great natural ability earn more and accumulate more than others.

2. *The System of Private Property* : Accumulation of wealth, and income from such accumulations, is possible only if private ownership of property is allowed. Under capitalism, private property is allowed ; therefore inequalities occur. Under socialism, private property is allowed only to a limited extent ; therefore inequalities are much less.

3. *The System of Inheritance* : The accumulations of able individuals pass to their heirs by the system of inheritance. The heirs are able to enjoy income and wealth without doing any work. Some systems of inheritance (e.g., primogeniture in England) produce more inequality than others.

4. *Economic Stratification and Opportunity* : Rich people, because of their social connections, get chances which poor people do not. Thus rich people become richer while poor people become poorer.

Effects of Inequality. Inequality of incomes and wealth produces many harmful effects.

1. When there is inequality, the *price-system cannot function properly* and there is wrong guidance of production. In a community where the richer classes predominate, goods are produced according to the preferences of the rich. Proportionately more resources are devoted to the production of luxury articles.

2. *The evils of the rich.* The rich can corrupt administrators. The rich have the power to exploit the poor. They can suppress the talent of the poor. Inequality of income produce monopolies and *vice versa*.

3. *Inequality leads to waste.* People with high incomes spend their time in idleness and dissipation. Hence there is loss of manpower which might have been used for productive purposes. People with low incomes lack the minimum requirements of good living. The standard of living becomes low and the quality of the population tends to deteriorate.

4. Poverty leads to *discontent and unrest* and introduces an element of instability in society. It leads to class conflict.

5. Maldistribution of wealth is a *social loss*. Rs. 100 to a rich man has less utility than Rs. 100 to a poor man, because the poor man can use the money to satisfy urgent wants (his necessities and comforts) whereas the rich man will use it for less urgent wants (luxuries). A transfer of wealth from the rich to the poor will increase the total utility of wealth, provided the transfer does not lead to a reduction in the total output of wealth. Other things remaining the same reduction of inequality will increase economic welfare.

6. The *democratic form* of government is *incompatible with extreme economic inequality*. Democracy implies political equality. But political equality cannot be effective without economic equality.

Arguments Justifying Inequality. Arguments have been put up in favour of retaining some amount of inequality. They are as follows :

1. In most countries the national income is so low that if it is equally distributed everybody will be very poor. Therefore, we *should concentrate on how to increase production* instead of on reducing inequality.

2. The desire to earn high incomes and great wealth is the chief *incentive to work and enterprise*. If absolute equality is enforced the incentive will be lost and production will suffer. It is argued, on this

ground, that inequality should not be eliminated though there is no harm in reducing it.

3. Some writers argue that no two individuals are alike, therefore *inequality is natural*.

4. *Pareto's Law*. Towards the end of the last century, the Swiss economist Pareto studied income statistics of many countries and found that the degree of inequality was more or less the same everywhere. He, therefore, concluded that there was an inevitable tendency for income to be distributed in the *same unequal way* in all countries—regardless of social and political institutions and regardless of taxation. This is known as Pareto's Law. Modern investigations, however, seem to show that there is nothing 'inevitable' in any particular type of income distribution. Pareto's deduction was based upon a special method of measuring inequality. Use of other methods show a distinct connection between inequality and the social and legal system. It is therefore possible for the state to reduce inequality by judicious measures.

Methods of Removing Inequality. There are three possible lines along which action may be taken to reduce inequality. They are (i) the rich may be made less rich by forcing them to part with some of their wealth and income, (ii) the poor may be made less poor by raising their incomes and giving them various free services, (iii) the economic system (capitalism) which permits inequalities may be changed. The steps which may be taken for accomplishing the afore-said objectives are detailed below.

1. *Reduction of the Excessively Large Incomes*: This can be done through the following methods:

- (i) High taxation of unearned incomes from land-rent, profit and interest.
- (ii) Restrictions on inheritance by death-duties or otherwise.
- (iii) Progressive taxation.
- (iv) Control over monopolies.
- (v) Nationalisation of public utilities.

Some writers suggest fixing a ceiling on personal wealth and incomes. But it is very difficult to enforce such a measure.

2. *Raising the Low Incomes*: This can be done through the following methods:

- (i) Minimum Wage Laws.
- (ii) Encouraging active trade-unionism.
- (iii) Increasing the supply of scarce productive agents by economic planning and otherwise.
- (iv) Control over population growth.
- (v) Improving the economic environment by measures for education, social reform, improved housing, sanitation, social

insurance, hospitals and welfare assistance. There is also private charity.

- (vi) Fiscal and Monetary policies. Many people favour *guaranteed jobs* and *guaranteed incomes*. It has been said the Government is the employer of last resort. Anyone who cannot get a good job from private industry should have the right to a job from the Government.

The guaranteed income involves payment of money to the poor (i.e., people who earn less than subsistence). Such a programme of payment by the Government has been called a negative income tax. (People earning above the poor must pay a positive income tax).

Difficulties : The programme is very costly. Even in U.S.A. the programme is not followed fully. There is another difficulty—a guaranteed income has a disincentive effect. People getting too much charity do not work and productive effort is reduced.

3. *Changing the Economic System* : Economic inequality is the characteristic feature of the capitalist organisation of society. Equality may be secured by adopting the socialist pattern of society. A violent change, however, may disorganise production and reduce the national output to such an extent that the people may (even with equal distribution) be worse off than before.

Dangers. Too vigorous measures for reducing inequalities may lead to *loss of incentives* and *reduction of the national output*. Curtailment of high incomes by taxation or otherwise may *reduce savings and hamper enterprise*. Too many benefits to the poor may *encourage idleness* and thus reduce output. Hence, measures for reducing inequality must be applied with caution.

RECOMMENDED READINGS

1. Ruggles and Ruggles, *National Income Accounts and Income Analysis*.
2. Cairncross, *Introduction to Economics*, Chs. 22, 25, 26.
3. Benham, *Economics*, Ch. XXV.
4. Samuelson, *Economics*, (9th edition), Chs. 5, 10, 27, 28, 40.

EXERCISES

1. How would you define and measure the National Income of a Country? (C.U. B.A. '56; B.Com. '59; compare with C.A Nov., '63).
2. Examine the significance of national income estimates, and explain the different methods that may be adopted for measuring the national income of a country. (C.U. B.Com. '62).

3. Carefully explain the marginal productivity theory of distribution. (C.U. B.A. '63, '68).

4. Define marginal-revenue product, distinguishing it from marginal physical-product. Explain the proposition that profit is not at a maximum unless each factor-price exactly equals its marginal-revenue-product. (C.U. B.A. '64, '66).

5. Explain the factors that govern a firm's demand for inputs under conditions of perfect competition. (C.U. B.A. '69).

6. To what extent is it possible to bring about greater equality in income distribution through taxation and public expenditures? (C.U. B.Com. '59).

7. What are the causes of economic inequality? How far can the inequalities in income be corrected by public finance operations? (Mysore B.Com. '68).

8. Write short note on—Marginal Revenue-product. (C.U. B.A. '72).

9. What do you understand by the marginal productivity theory of distribution? State the underlying assumptions. What are its shortcomings as a distribution theory? (C.U. B.A. '74).

CHAPTER 18

WAGES

REAL WAGES AND NOMINAL WAGES

The payment made for the services of labour is called Wage. The amount of money paid is called the *money wage* or the *nominal wage*. The amount of goods and services which the labourer can get with his money wage, and otherwise, is called the *real wage*.

The real wage of labour depends on the following factors :

1. The amount of money wage multiplied by the purchasing power of money.
2. The amount of extra facilities given by the employer, if any. (Example : free quarters).
3. The conditions of services, *e.g.*, length of the working period, regularity of irregularity of employment, the agreeableness or disagreeableness of the environment in which he works and prospects of promotion etc.
4. The possibility of extra earnings (like the tips earned by waiters).

Real wages are more important than money wages. The well-being of the labourer and his standard of living depends on his real wage and not on his money wage.

DIFFERENCES IN WAGES

The wage-rate is not uniform. It varies widely as between (1) different occupations, (2) different countries and (3) different times. The causes of these variations are stated below :

I. Variation of Wages in Different Occupations. Wages vary in different occupations because of the following reasons—

(1) *Agreeableness or disagreeableness of the job* : The supply of labour for an agreeable occupation is comparatively large and therefore the wage rates are lower. In a disagreeable occupation, the rate of wages must be higher in order to compensate for its lack of attraction.

(2) *The cost of training* : Occupations which require a long or expensive period of training are usually better paid, *e.g.*, medicine, accountancy or engineering.

(3) *The regularity of employment* : Wages in occupations, which cannot be carried on throughout the year, are usually higher (*e.g.*, in building works). Labourers in such employments must earn enough

during the working season to maintain themselves during the whole year.

(4) *Differences in ability* : Men with greater ability or efficiency earn more than men with less ability and efficiency.

(5) *Opportunities for spectacular earnings* : Occupations, in which very high incomes are possible, attract many people. There is always oversupply of labour in them and average earnings are low. The legal profession is the best example of such a situation.

(6) *Relative social prestige* : Occupations which confer social prestige, e.g., teaching or law, become overcrowded and the average earnings fall. In some countries, considerations of "saving face" prevent change of occupation. Some men will starve rather than take up a job which involves manual labour.

(7) *Immobility of labour and the existence of Non-competing Groups* : Inequality exists in every community. The people are divided into a number of groups separated from one another by wealth, income, tradition and education. Members of a particular group have access to some occupations and not to all. Such groups are called non-competing groups. Labourers cannot move freely from one group to another. The result is that in some occupations there is oversupply of labour and low wages while in others there is short supply and high wages. The sweeper's work is disagreeable but still his wages are low because a sweeper cannot easily move to a better paid occupation.

II. Variation of Wages between Different Countries. This is due almost solely to immobility of labour. Differences in language, religion, laws and social customs prevent people from moving from one country to another. Wages in different countries cannot therefore be equalised.

III. Variation of Wages at Different Times. The conditions of demand and supply of labour vary at different times and therefore the average rates of wages also vary. The chief causes are, variations in efficiency, number of population, and the volume of employment.

THE SUPPLY CURVE OF LABOUR

Supply curves for labour can have various different shapes. The shapes depend on, among other conditions, whether the context is the short run or the long run. The short run supply curve shows the relationship between the average real wage and the number of hours of work offered in a given period.

Backward supply curve : It is generally held that the short-run supply curve of labour rises at first towards the right up to a certain wage rate and then it begins to bend back towards the left hand side as in the diagram illustrated in Figs. 15 and 16, p. 128.

Substitution-effect and income-effect : It is not difficult to explain this situation. Suppose that a worker has been offered a higher wage. He is tempted to work some extra hours because now each hour of work is better paid. Each hour of leisure has become more expensive—hence he is tempted to substitute extra work for leisure. But working against this so called “substitution-effect”, there is an opposing “income-effect”. With wage-rate higher, the worker is in effect, a richer man. Being richer, he will buy more goods including leisure. So long as the “substitution effect”, is more powerful than “income effect”, the supply of labour will increase as the wage rate increases. But after the critical point P has been reached, the “income effect” becomes more powerful than “substitution effect”. (See Fig. 16, p. 128). After that point P, the worker prefers leisure to work and so the supply of labour tends to fall. Thus with the help of income effect and substitution effect we can explain why wages may either increase or decrease the quantity of labour supplied.

Diagram : The argument stated above can be shown with the help of indifference curves.

As regards the attitude of an individual towards its income it can be said the more the income, the better. More income is to be had only by more work. More work means the sacrifice of some leisure, which is also desirable. The gain in utility from more income has to be balanced against the loss of utility from less leisure. Indifference curves can be constructed to show how income and leisure are substituted. In the figure given below, the line SP represents one hourly wage rate. If this rate prevails, the highest indifference curve is I, which is tangent to the straight line at point P. Higher wage rates

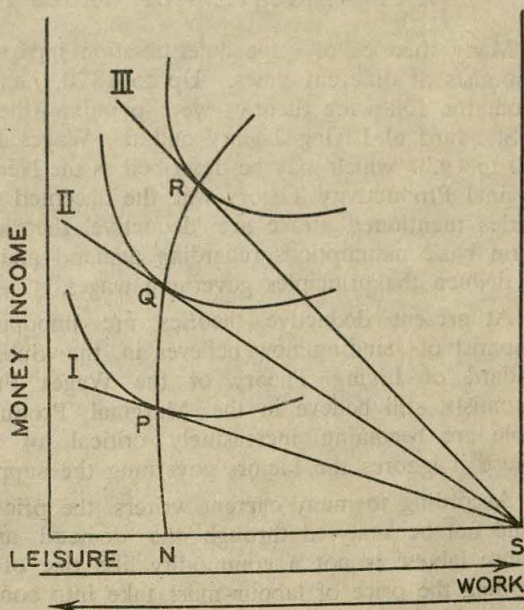


FIG. 65

are shown by the slopes of the lines SQ and SR. The points Q and R are also points of tangency. It means that as the wage rate rises, the individual first works more hours and then works fewer.

The information conveyed by this indifference diagram can be rearranged and presented in an ordinary price-quantity diagram as has been done in the Fig. 16. The curve SPS_1 is a supply curve which shows the relation between wage rates and the number of hours worked at each. It is applicable to an individual. But the same curve can be made to represent a group of persons in a labour market when the supply curves of different persons are added.

The backward sloping supply curve can apply to the upper classes as well as to other people. It is only a question of the shapes of indifference curves, *i.e.*, of the importance attached to income and leisure. Backward-sloping supply curves for labour are probably fairly common. When incomes are low, supply curves are positively sloped. But when incomes rise above some level, leisure begins to compete strongly with incomes; then supply curves alter their slopes to become backward-sloping.

A CLASSIFICATION OF WAGES THEORIES

Many theories of wage determination have been put forward by economists at different times. Up to 1870, *i.e.*, during the Classical Period, the following theories were popular—the Subsistence Theory, the Standard of Living Theory and the Wages Fund Theory. During 1870 to 1930, which may be described as the Neo-Classical Period, the Marginal Productivity Theory was the accepted theory. All the four theories mentioned above are 'deductive' theories. They start from certain basic assumptions regarding demand and/or supply of labour and deduce the principles governing wages.

At present deductive theories are unpopular. Practically no economist of standing now believes in the Subsistence Theory, the Standard of Living Theory or the Wages Fund Theory. Some economists, still believe in the Marginal Productivity Theory. But people are becoming increasingly critical of this theory, mainly because it ignores the factors governing the supply of labour.

According to many current writers, the price of labour or wages should not be analysed through the demand and supply apparatus because labour is not a commodity like rice or potatoes. A theory regarding the price of labour must take into consideration the special features of the labour market, *viz.*, the existence of monopolistic organisations of employers and workers, differences in their relative bargaining power and the increasing political power of the working class. These features make it almost impossible to lay down the

conditions of equilibrium of the labour market with the same amount of precision as in the case of a commodity market.

Some modern writers think that there should be more empiric investigation of wage rates and wage differentials (differences in wages between workmen). They believe that a satisfactory wage theory may emerge out of such investigations. Research on this subject is being carried on but no empiric wage theory has yet been developed.¹

SUMMARY OF WAGE THEORIES

The leading wage theories are summarised below.

I. The Subsistence Theory (or the Iron Law of Wages).

The Subsistence Theory, also known as the Iron Law of Wages, was worked out by Lassalle, the German socialist, and was based on the Malthusian Theory. Briefly speaking, this theory maintains that wages tend to equal the amount necessary for the *subsistence* (or the *bare maintenance*) of the labourer. This proposition is supposed to be proved by the following argument: If wages at any time become higher than subsistence, population will increase, competition for employment will become keener and wages will be dragged down to the subsistence level. If wages are less than subsistence, some workers will be unable to marry and rear children, population will be reduced, supply of labour will fall and wages will go up.

The Subsistence Theory was acceptable to the classical economists because it fitted in with their 'cost of production theory' of value. The 'subsistence' was the 'cost of production' of labour. Hence, the price of labour or wages must equal subsistence. Karl Marx was of opinion that the Subsistence Theory adequately explained wage determination in a capitalist economy. He used the theory to show that under capitalism wages were always less than the total product of labour and therefore workers were 'exploited'.

Criticisms of the Subsistence Theory: The Subsistence Theory is not accepted nowadays. The principal criticisms against the theory are summed up below.

1. The theory rests on the hypothesis that increase in wages leads to increase in population. This is contrary to facts.
2. The theory attempts to explain wages from the supply conditions of labour. It pays no attention to the reason why labour is demanded. Labour is demanded because it is productive. The wages of labour must have some relationship with the productivity of labour.
3. The theory ignores the influence of Trade Unions on wages. Trade Unions can increase wages under certain circumstances, much beyond the level of subsistence.

¹ *New Concepts in Wage Determination*, edited by Taylor and Pierson.

4. The theory does not explain why wages are unequal in different occupations. The amount necessary for subsistence is more or less equal for all workers. If wages were determined by subsistence, they would be equal in all occupations. But they vary as between different occupations.

II. The Standard of Living Theory. The Standard of Living Theory of wages is an improved version of the Subsistence Theory. According to this theory, wages must equal the amount necessary to *maintain the labourer in the standard to which he is accustomed*. If the wage rate is less than this amount, the supply of labourers will fall; if it is greater, the supply will increase. Therefore the wage rate will tend to conform to the standard of living.

Elements of truth. The theory is partially true. Workmen generally tend to resist (by strikes etc.) any attempt to lower wages below their usual living expenses (which includes not merely the bare necessities of life but also those comforts and luxuries to which they are accustomed). The standard of living also affects efficiency. A high standard of living (better food, better houses etc.) increases the productivity of labour and makes higher wages possible.

Criticisms. The theory, however, cannot be accepted as a complete explanation of wages because of the following reason:

1. The theory only explains the *supply price of labour*—what rates of wages are wanted by them. Wages also depend on the demand for labour which is based on its productivity. Whatever the standard of living may be, the employer cannot pay more than the marginal worth of labour to him, *i.e.*, its marginal productivity.

2. *The standard of living is variable*, depending on the rate of wages. History shows that the standard of living of labour has improved considerably during the last one hundred years. Whether the improvement was due to high productivity and high wages or whether high wages followed the high standard of living is difficult to determine. Probably they were mutually interdependent.

Conclusion. The standard of living theory emphasises one of the forces determining wages (the supply side). It is analogous to the cost theory of value. The true theory of wages must take into account both the demand for and supply of labour.

III. The Wages Fund Theory. According to the Wages Fund Theory, worked out by J. S. Mill, a fixed part of the capital of a country is devoted to employing labour. This is called Wages Fund. The general level of wages is equal to the *Wages Fund divided by the number of labourers*. According to this theory, wages in one industry can rise only at the expense of wages in another industry. If wages in all industries rise, profits will be reduced, capital would be drawn out and shortage of employment would reduce wages again. The Wages

Fund theory was very popular in Great Britain during the mid-nineteenth century and was used to discredit the activities of trade unions. Mill later renounced the theory.

Criticisms of the Wages Fund Theory: 1. The theory ignores the fact that labour is productive. Wages may be advanced out of capital but ultimately they come from the labourer's product.

2. Fall of profits does not immediately drive capital out of production. Profits are also elastic.

3. The theory does not explain inequality of wages in different countries and occupations.

4. The theory is disproved by facts. Wages are frequently high in new countries where capital is small, and low in old countries where capital is large.

IV. The Marginal Productivity Theory. According to this theory *wages tend to equal the value of the marginal product of labour*, i.e., the additional product which the employer gets by adding one more unit of labour. This theory is analogous to the marginal utility theory of value.

Suppose that a firm employs 100 workers. If one more worker is employed, keeping the other factors unchanged, the output increases by 3 units. The marginal product of labour in this firm is 3 units. Suppose that the price of the product is Re. 1 each. Then the value of the marginal product is Rs. 3. So long as the market rate of wages is less than Rs. 3, it is profitable for the firm to engage additional labourers. But increase in the number of labourers will reduce the marginal product (because of the principle of diminishing marginal productivity). Therefore if employment is increased, a time will come when the value of the marginal product will be just equal to the market rate of wages. There will be no increase of employment beyond this point. Hence at equilibrium the *rate of wages must equal the value of the marginal product of labour*. In the example given above, perfect competition is assumed. Under imperfect competition, the rate of wages will equal the marginal revenue product of labour. (See under "Marginal Productivity Theory", p. 262.) Through substitutions and transfers of capital and labour, wages and marginal productivity will be equalised throughout the economy.

The marginal productivity theory of wages is based upon a large number of assumption, e.g., perfect mobility of labour and capital, perfect homogeneity and substitutability of labour, full employment etc. (See list given in previous chapter under "Marginal Productivity Theory", p. 260.)

Criticisms of the Marginal Productivity Theory of Wages: The marginal productivity theory of wages has been criticised on the following grounds.

1. The theory assumes perfect competition in the labour market. In actual life the labour market is imperfect. There is a high degree of immobility. Labour is not homogeneous and different units of it are not perfectly substitutable for one another.

2. According to Dobb² the demand for labour does not depend on productivity but on the willingness of the capitalists to save which depends on previous profits and on previous wages bargains.

3. The strongest criticism against the marginal productivity theory is that it does not take into account the forces governing the supply of labour. The marginal revenue product of labour determines the demand for labour, it cannot by itself determine the equilibrium rate of wages.

Conclusion : It may be pointed out that Marshall and other orthodox writers do not assert that wages are *determined by marginal productivity*. They only claim that there is a functional relationship between the rate of wages paid, marginal productivity and the number of persons employed. Therefore, marginal productivity is the *measure* of the rate of wages, not its *determinant*.

The marginal productivity theory throws into clear light one of the forces that influence wages (the demand side). Wages are also influenced by the factors which govern the supply of labour.

V. The Demand and Supply Theory of Wages. According to many modern writers, the wage rate depends on the *demand for and the supply of labour*.

Demand : Labour is demanded because of its productivity. The employers can never pay wages higher than the marginal product of labour. Generally speaking the larger the number of labourers employed, the less is the marginal product. This follows from the principle of diminishing marginal productivity which is a consequence of the Law of Variable Proportions. The *value of the marginal product* depends, under competitive conditions on the price of the product and under imperfect competition on the marginal revenue. These two quantities set the *maximum limit* to the rate of wages.

Supply : The supply of labour depends on its *supply price*. At a particular price a certain number of labourers, will be available for employment. Higher wages will generally lead to an increased supply of labour. Lower wages will generally lead to diminished supply. The price, at which a certain number of labourers is available, is the supply price of that amount of labour. The supply price of labour depends on the standard of living of the workers, the strength of trade unions and various other factors.

Equilibrium : If we consider a particular group of labourers e.g., carpenters, we can construct a demand and a supply curve on the

² Dobb, *Wages*, Chs. IV and V.

assumption that other things remain the same. [The other things are—number of firms wanting the services of the group, demand for the products, the production possibilities open to the firms, prices of other products, etc.] The equilibrium rate of wages for this group of workers will be given by the point of intersection of the demand and the supply curve. This rate will naturally depend on the *shape* of the demand and supply curves. [The shape is determined by the *elasticity* at the different points of the curves.] The analysis is applicable to the short run. It is also applicable to the long run if we can construct the long run demand and supply curves of labour. "The level towards which the hourly wage rate will tend in the long-run will depend on the elasticity of the long-run demand and supply curves." (Ryan).

Under perfect competition : The rate of wages will tend to reach equilibrium at the point where the demand price and the supply price are equal. If all people were exactly equal, as regards their ability, their wage rate will be the same.

Under imperfect competition : In real life perfect competition does not exist. The wage rates tend to fluctuate between the maximum set by the marginal productivity of labour and the minimum set by the standard of living below which the labourer will not accept employment. The actual rates are determined between these points according to the relative bargaining power of the workers' and employers' organisations. Generally speaking, the employers are more powerful. Strikes are difficult because workers lack reserve power. As a rule, therefore, wage rates tend to approach the minimum rather than the maximum. Nowadays trade unions have become very powerful. Therefore the wage rates are not so low now.

Criticisms : The Keynesian Theory of Employment throws doubts on the demand and supply theory of wages. The Keynesian Theory shows that the demand for labour depends in part upon the level of income which depends in part upon the level of employment which is one of the variables supposed to be determined by the demand and supply of labour. So the determination of wages cannot be isolated from the numerous variables which determine the level of employment and income.³

THE GENERAL LEVEL OF WAGES

The general level of wages in a country is found by *averaging* the wages of workers in the different occupations in a country. The general level may be calculated in terms of *real* wages or in terms of *money* wages. In the advanced countries of the world, such as U.S.A. and U.K., the wage level is much higher than what it is in underdeveloped countries like India.

³ See article of Haley in Ellis, *Survey of Contemporary Economics*.

The general level of *real* wages in a country is the resultant of many factors. The important factors are mentioned below.

1. *The Output per Head* : Workers cannot get more than what they produce. Therefore the wage level must be related to labour productivity. According to many writers, the *rate* of wages is determined by the marginal productivity of labour. The total income of the workers as a whole is equal to that part of the aggregate output which is attributable to labour. Hence, the average wage is equal to such output divided by the number of workers, *i.e.* the output per head.

It must be noted, however, that the workers of a country may get as wages, *less* than their average output, because of the superior bargaining power of the employers. There may also exist political and institutional factors favouring the exploitations of labour. During the early nineteenth century in Great Britain, the Government favoured the employers by following the policy of non-interference in economic matters (*laissez faire*). The wage rates were consequently low. Wage rates may also be low in a fascist dictatorship.

2. *The Share of Labour in the National Income* : From what has been stated at the end of the previous paragraph, it is apparent that aggregate wages, or the part of the national income which goes to labour, is *not* determined solely by the productivity of labour. Labour's share in the national income is considerably influenced by various political and institutional factors like, the system of property rights, methods of industrial organisation, existence and power of trade unions, control of the administrative machinery etc. During the middle ages, the greater part of the national income went to the landlords. During the early nineteenth century in Great Britain, the greater part of it went to the capitalists. In modern times, the development of trade unionism and collective bargaining has increased the share of labour.

Bowley's Law : Statistical investigations show that the proportion of wages and salaries to the total return to properties was more or less constant. In U.K. it was about 42%. In U.S.A. it was about 35%. The constant proportion has been called Bowley's Law.

Certain theories have been advanced regarding the determination of labour's share in the national income. Kalecki⁴ is of opinion that labour's share depends upon the degree of monopoly power in the country. The greater the monopoly power possessed by the capitalists, the less is the share of labour. In all capitalistic societies, monopoly exists and therefore labourers are likely to get less than what they deserve. According to some neo-classical writers, the share of labour in the national income is determined by the elasticity of substitution between capital and labour. There are many other theories also.

⁴ Kalecki, *Economic Dynamics*, Ch. 2.

3. *The Terms of Trade* : According to some writers,⁵ the level of real wages in a country varies from time to time according to the terms of trade (*i.e.*, the rate at which a country gets its imports in exchange of its exports). If the terms of trade are favourable, the country gets a higher real income from its international trade and hence labour incomes rise. In the converse case, the national income is less and labour income also becomes less.

THE EFFECT OF INVENTIONS/INNOVATION ON WAGES

Innovation : The term innovation means the introduction of a new product, a new process or a new market. The term invention means to originate a new product or a new method of producing a thing. Innovation includes invention. (See ch. 21).

Invention : A new invention in a particular industry may (i) reduce the number of labourers required or (ii) reduce the amount of capital or land required. The former may be called a labour-saving invention and the latter a capital-saving or land-saving invention.

Labour-saving invention. The effect of a labour-saving invention is to reduce the demand for labour in that industry. But the aggregate demand for labour may not fall. For, the invention may increase the productivity of industry as a whole and increase employment. Other industries may expand thus leading to an increase in the total demand for labour. The discovery of railways is an example. It reduced the demand for coachmen and carters but led to such an expansion of trade and industry that the general wage level increased considerably. But though inventions are useful to the society as a whole a particular invention may seriously affect a particular group of workers. The weaving machine, which was a labour-saving invention, considerably reduced the income of the handloom workers. Toil-saving inventions like vacuum cleaning or washing machines may reduce the earnings of domestic workers and washermen. The society as a whole will, however, gain from increased productivity.

Capital-saving invention. A capital-saving invention or a land-saving invention (*e.g.*, wireless telegraphy or broadcasting) reduces the demand for capital and land and reduces interest and rent. Such an invention makes it possible for labour to receive a greater share of the national income. Economic history during the 19th and the 20th century shows this situation—a progressive fall in the rate of interest and a rise in the rate of wages.

Conclusion : A labour-saving invention increases the return to capital more than the return to labour. On the whole, therefore, labour-saving inventions have been of greater advantage to capitalists than to labourers. Wages and employment rose during the 19th and the 20th

⁵ Benham, *Economics*, p. 369.

century but the proportion of the national income going to capitalists increased more than in proportion, thereby causing great inequalities of income and wealth.

ARE HIGH WAGES ECONOMICAL ?

Low wages are not necessarily cheap to the employer. If the efficiency of labour is low, the output is low and the cost of production is high even though the wage rate is low. On the other hand high wages, if accompanied with high efficiency and increased output, may make cost of production low. The employer is not concerned with the money wage that he pays but with the output in relation to his outlay on wages. The latter may be called the wage-costs. Employers want low wage-costs, not necessarily low wages.

Generally speaking, high wages lead to low wage-costs because of the following reasons :

1. High wages lead to a higher standard of living and greater efficiency.

2. High wages enable the employer to secure the best men available in the market.

3. High wages create a friendly atmosphere and good labour-capital relations.

For the reasons mentioned above, Taussig remarked, "that employer is most efficient who contrives to pay the highest wages."

WHY ARE WOMEN'S WAGES LOW ?

In recent times women workers have adopted the slogan, "Equal pay for equal work." There is a tendency now towards equality between men and women in this respect, but as a rule the wages of women are lower than the wages of men in similar occupations. The principal reasons for this state of affairs are as follows :

1. Women generally can afford to work at lower wages. They have fewer dependants and smaller needs. They seek jobs mostly as a "meantime occupation" pending marriage. Their jobs are usually supplementary sources of income—the main income coming from their husbands and parents.

2. Women have less bargaining power.

3. In some industries women constitute a non-competing group with an excessive supply (the sweated industries). They suffer from comparative immobility. The number of alternative occupations open to a woman worker is small. [A "sweated industry" is one where the worker gets maximum of work for minimum of pay.]

4. In some cases the productivity of women workers is low. This is due to weaker physical strength and inferior training.

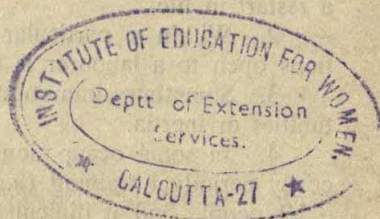
In modern times women have been emancipated. In most cases they are as efficient as men in jobs where sex is not, by itself, a disqualification. The constitutions of some countries (e.g., India) provide for "equal pay for equal work".

RECOMMENDED READINGS

1. American Economic Association, *Readings in the Theory of Income Distribution*, Section on Wages.
2. Dunlop, *Theory of Wage Determination*.
3. Rothschild, *Theory of Wages*.
4. Samuelson, *Economics*, (9th edition), Ch. 29.
5. Benham, *Economics*, Ch. XXVI.
6. Cairncross, *Introduction to Economics*, Ch. 23.

EXERCISES

1. Explain the factors which account for differences in wages between different occupations. (Mysore '67).
2. Show how wages are determined by the demand for and supply of labour.
3. Examine the importance of the conception of standard of life in the theory of wages. How does that standard actually exert its influences on wages?
4. The average woman earns considerably less than the average man. Why?
5. Explain and discuss the effect of invention on wages and economic growth. (Cp. C.A. May '69).
6. Analyse the factors that determine differences in wages. (C.U. B.Com. '72; B.A. '72).
7. Will an increase in the wage rate necessarily increase the quantity of labour supplied? Give reasons for your answer. (C.U. B.A. '73).
8. Distinguish between nominal and real wages. What factors would you take into consideration in determining real wages? (C.U. B.A. '69; C.A. Final Nov. '73).
9. To what extent can it be said that wages are determined by marginal productivity of labour? Give reasons for your answer. (C.U. B.Com. '70, '74).



CHAPTER 19

LABOUR PROBLEMS

MOBILITY OF LABOUR

Importance. Mobility means capacity to move. It should be possible for labourers to move easily from one occupation to another and from one local area to another. Mobility of labour is important for the following reasons :

(i) It facilitates economic development. Regions suffering from scarcity of labour can be developed more quickly if there are no hindrances to the movement of labour into them from the over-crowded regions.

(ii) It provides the workers with opportunities of increasing their earnings. There are occupations (and regions) where there is scarcity of labour, just as there are occupations (and regions) which are over-crowded. It will be advantageous to all if labourers can move freely from the latter to the former.

Causes of Immobility. There are many obstacles to mobility of labour. Immobility of labour is of two kinds : *geographical* and *occupational*. Geographical immobility means lack of movement from one geographical area to another. It is due to differences in language, religion, laws and social customs. Owing to these differences labourers cannot move freely from one country to another. Sometimes, within the same country, there are regional differences in language and custom which discourage movements. For example, it is not easy for a Bengali labourer to move to (say) Madras, although such movements occur.

Occupational immobility means lack of movement from one occupation to another. Occupational immobility is due to the following causes :

1. Older workers find it difficult to change their occupations because such change involves sacrifice of their acquired knowledge and a restart in life.

2. Within a particular area the number of alternative occupations open to a labourer is usually limited.

3. Sometimes immobility is due to ignorance of available opportunities or inertia.

4. In some occupations new entrants are required to undergo a costly period of training (*e.g.*, accountancy and law). Comparatively older people find it difficult to enter these occupations. In some occupations there are racial, regional or linguistic discriminations.

Rigid social institutions keep men confined to the non-competing groups in which they are born and create inequalities of opportunity. In India the caste system is a great barrier to mobility.

Methods of Increasing Mobility. Mobility of labour can be increased through the following measures :

1. Establishment of Employment Exchanges which will spread information relating to jobs.
2. Formulation of schemes for assisting transfer of working class families from one place to another.
3. Establishment of technical training centres for unemployed workers and for workers in overcrowded employments.
4. Provision of free primary and secondary education which will create greater opportunities for young men belonging to the lower income groups.

TRADE UNIONS

Definition and Functions. A Trade Union has been defined by Sydney and Beatrice Webb as a "continuous association of wage-earners for the purpose of maintaining or improving the conditions of their employment". Its functions fall into two categories (i) fraternal and (ii) militant. Fraternal functions mean activities undertaken by the trade union to increase the welfare of workers. They include organisation of sports, recreation, education, mutual aid funds etc. Militant functions mean fighting the employer for higher wages, better working conditions etc.

A trade union may be formed by all workers under a particular employer or by similar workers under different employers. There are also industrial trade unions including all workers in a particular industry. There is a tendency in all countries for trade unions to work together under some sort of a central organisation.

Advantages of Trade Unions. 1. A trade union gives the workers a sense of confidence.

2. Trade unions increase the bargaining power of labour.

3. They serve as channels through which employers can know the grievances of labourers.

4. They serve as the agency through which voluntary settlement of industrial disputes may be secured.

5. The fraternal activities of trade unions improve the standard of living of workers.

Disadvantages of Trade Unions. 1. Trade unions sometimes *restrict employment*. Sometimes they claim that only union members would be eligible for employment. This is known as the "closed shop" policy. Where the union does not object to non-members being appointed there is said to be "open shops". A "closed shop" policy is

not necessarily bad. It becomes bad only when the union insists on too stringent conditions for membership.

2. Trade unions sometimes *prevent the introduction of labour-saving machinery*, in order to avoid retrenchment. In the long run, however, this policy reduces the national output and is injurious to society.

3. Trade unions sometimes insist on *too high wages*. This prevents the formation of new enterprises and reduces employment.

4. Sometimes trade unions follow a "*go-slow*" policy (or *work according rules*). This restricts output and causes social loss.

Necessity of Trade Unions. Trade unions are vitally necessary in every industrial country. The bargaining power of an individual labourer is low because of the following reasons; (i) Labour is a perishable commodity. A day's labour lost is gone for ever. (ii) The labourer has no reserve. He must either work or starve. (iii) Labourers are usually uneducated. (iv) Every employer occupies a monopolistic position as against the labourer. As Marshall says, "a man who employs a thousands others is in himself an absolutely rigid combination to the extent of one thousand units among buyers in the labour market".

The primary economic function of a trade union is to increase the bargaining power of labourers and secure for them reasonable wages and conditions of work. In every democratic country the necessity of trade unions is recognised. They are given certain privileges by law.

Can Trade Unions Raise Wages? It is commonly argued that trade unions cannot raise wages. The argument is based on the marginal productivity theory of wages. It is said that if by trade union action wages are raised beyond the level of marginal productivity, the profits of the employer will be reduced or alternatively, the price of the commodity will have to be raised. If profits are reduced below the normal level owing to high wages, the employers will stop production, employment will diminish and the labourers will be worse off than before. Again, if high wages are secured by raising the price of the product to the consumers, the demand will fall, total sales will diminish and reduction of employment will follow. If the wages of all workers in a country are increased, all costs and prices will increase, the purchasing power of money will fall and the rise in normal wages will be counterbalanced by the fall in real wages. Therefore, the activities of trade unions are either infructuous or dangerous.

It is not possible to accept the arguments stated above. The marginal productivity theory does not provide a satisfactory explanation of how wages are determined because it does not take into account the supply conditions of labour. Trade unions can influence both the

supply of and the demand for labour and can thereby influence wage-rates.

The circumstances under which trade unions can raise wage-rates are enumerated below.

1. Wages-earners in some occupations do not get the full value of their marginal product, *e.g.*, under imperfect competitions. When output increases, the price falls. The production is now sold at a lower price. Therefore it is impossible for the employer to pay to the productive factor the full value of the marginal product. There is 'exploitation' of the productive factor because the factor gets less than the marginal product. In such cases trade unions can raise wages to the level of the marginal product. (See p. 264).

2. Trade unions can raise the marginal productivity of labour. The fraternal activities of trade unions can improve the standard of living and the efficiency of workers.

3. A strong union, by insisting on proper wages and working conditions, can eliminate inefficient employers and force others to use up-to-date machines and appliances.

4. Trade unions in a particular industry or of a particular group of workers can raise their wages at the cost of other workers or the other factors of production. For example, a strong union of masons can get high wages from building contractors because without masons no building can be constructed. But the contractor will not pay the higher wages from his pocket. He will secure it by reducing the wages of other labourers, paying less to the other factors of production or charging higher prices from the owners.

5. Trade unions in a particular industry or of a particular group of workers can raise the wage by adopting monopolistic practices. For instance, they can limit the supply of a class of labour through a longer period of apprenticeship, or through raising membership fees of the union. They can also restrict the supply of a particular class of labour by strictly demarcating works among their members.

Limits : Trade unions cannot raise wages to an unlimited extent. There are certain *limits to their bargaining power*. These limits are mentioned below :

(a) Labour can be substituted by machinery to some extent. Methods of production can be altered in such a way as to reduce the required number of a particular class of labourers. Also, union workers may be substituted by non-union workers, "black legs" or imported labourers. These factors determine what may be termed the *Elasticity of Substitution of Labour*.

(b) The substitutability of labour by other factors depends on the *Elasticity of Supply* of these other factors. If sufficient labour-saving machines are not available, labour cannot be replaced by machines.

(c) *The Elasticity of Demand* for the product is an important factor. If the demand is elastic, the burden of higher wages cannot be transferred to the consumers in the form of higher prices. If the demand is inelastic, it can be done to a certain extent. If, however, the wage-bill of the particular group of workers is a small part of the total cost of production, the effect on prices will be small and the effects of elasticity of demand will be correspondingly less.

INDUSTRIAL DISPUTES

A dispute between employers and employees regarding wages and other terms of service is called an industrial dispute. Industrial disputes occur frequently nowadays.

Causes. The usual causes of industrial disputes are demands for higher wages, better working conditions, less hours of work and security of service. They occur sometimes for political reasons and sometimes for dismissals and retrenchment.

Effects of Industrial Disputes. Industrial disputes cause immense harm to society. Manufacturers lose profits, capital equipments suffer damage from non-user, labourers lose wages, production falls, the national income is lowered and consumers suffer from diminution of supplies. Sometimes disputes take a violent form and riots and bloodshed occur. Relations between employers and the employed become strained and future industrial peace is endangered. Industrial disputes should therefore be avoided at all costs.

Is there a Right to Strike? The effects of industrial disputes are so bad that some writers urge prohibition of strikes. Since strikes, like revolutions, affect the entire social order they say that there can be no such thing as the right to strike. This is however, going too far. Every man has the natural and legal right to choose whether or not he will work under given conditions. A strike is merely a joint exercise of the right to refuse work. If this right is denied there will be no method left for securing reasonable demands of labourers like fair wages or fair conditions of work. The experience of 19th century Great Britain shows that the ordinary law of the land is powerless to protect workers against oppression. They must have a weapon to fight the employer for securing their just demands. But the weapon must not be misused.

An example may clarify the matter. In England there is no right to a public meeting as such. The right to meet follows from each individual's right to express his opinion (subject to the laws of libel and sedition), and the right of everyman to free movement. Similarly, the right to strike comes from everyman's right to work or not as he chooses. But a public meeting becomes unlawful under certain circum-

stances, e.g., when it endangers the public peace. It can then be prohibited. Similarly a strike can be prohibited when it vitally affects public life, for example, when it occurs in essential services like the railways, water supplies or electricity-works. A group of workers in an essential service, like the water-works, can enforce illegitimate demands if there is an unqualified right to strike, for people cannot live without water. Hence strikes in essential services should be either prohibited or allowed within definite limits. But there should not be any general prohibition of strikes.

Merely to prohibit strikes or control strikes will not solve industrial disputes. In the majority of cases disputes arise because of genuine grievances. The best way of avoiding disputes is to remedy these grievances.

Settlement of Industrial Disputes. After industrial disputes break out they must be settled as quickly as possible. There are three methods of bringing this about :

1. *Conciliation* : The parties may themselves settle the matter by negotiation. In Great Britain there are Industrial Councils consisting of representatives of employers and workers. They try to settle disputes by discussion. In India the Industrial Disputes Act, 1947, set up certain authorities for the investigation and settlement of industrial disputes. They are Works Committees, Conciliation Officers, Boards of Conciliation, and Courts of Enquiry. Reference to Arbitration may be added to the above. There are other authorities for the compulsory decision of disputes.

2. *Voluntary Arbitration* : Disputes may be settled by the arbitration of third parties.

3. *Compulsory Arbitration* : In some countries, industrial disputes are settled compulsorily through the intervention of the State. Pigou calls this, the method of "Coercive intervention". In Australia and New Zealand all disputes, except those in agriculture, must be referred to the Court of Conciliation whose decision is binding on both parties. In India, the Industrial Disputes Act of 1956 provides for the appointment of Industrial Tribunals and Labour Courts whose decisions are binding.

Agencies for Securing Industrial Peace. Various methods have been suggested for bringing about better relations between labour and capital and avoiding the outbreak of strikes and lock-outs. Some of these methods are described below :

1. *Works Committees* : There are small committees of workers' and employers' representatives formed in an industrial concern. The Committees try to settle differences of opinion amicably. In England they are known as Whitley Committees and they have done good work.

2. *Improvement of the Wages-System* : Attempts have been

made to improve the wages system in such a way as to increase the earnings of efficient workers without paying high wages to all. There are various ways of doing so, *e.g.*, the sliding scale, of which there are many varieties, and the Premium Bonus System. In some countries there is statutory minimum rate below which wages cannot be reduced. The minimum may be fixed by the state or by the courts of conciliation. Sometimes there are different minimum rates for different industries and sometimes one flat rate for all industries. The term Bonus is used to denote any extra payment to the workman in addition to his regular wages and allowances. The Payment of Bonus Act was passed in 1965. It provides for bonus irrespective of profit. The object of all these schemes is to maintain fair wages.

3. *Propaganda* : In many countries the Government and the employers' organization carry on propaganda for maintaining better industrial relations.

4. *Labour Co-partnership* : Labour Co-partnership means participation by the workers in the management. A typical example is the appointment of a director from the workers. The difficulty is that if such a director is selected by the workers he is more interested in wages than in the stability or prosperity of the business. There is a danger also of confidential information leaking out. If the director is not selected by the workers the scheme would be ineffectual. Risk-taking is not a function of labour. Labour co-partnership schemes have not been popular either among employers or among workers. It is the declared policy of India to associate workers with the management of State undertakings. A director can be appointed from the workers. In a Steel Works of the Central Government, its General Manager was appointed from the worker.

5. *Profit-sharing* : Profit-sharing is a system under which the workers receive, in addition to their wages, an extra payment proportionate to profits. The payment must be regular. The payment of occasional bonuses does not constitute profit-sharing.

Businessmen and industrialists are opposed to the system of profit-sharing because according to them if the sharing of profits is to be real there ought to be sharing of losses also. But workers cannot afford to accept deductions in bad times and will never like to take the risk of doing so. To avoid losses a larger reserve fund would have to be built up and this will reduce the divisible share of profits. The scheme also involves official check up of business accounts which would be unpopular.

6. *Labour Welfare* : The state and the employers may undertake schemes for the improvement of the workers' life, *e.g.*, recreation, education, better houses etc. Welfare schemes keep the workers contented.

7. *Labour Legislation* : Through legislation better conditions of work and various other things beneficial to workers might be secured. In all countries of the world labour legislation plays an important part in protecting the rights of workers and thereby creating a better atmosphere for industrial work.

8. *Co-operation between workers, public authorities and employers' organisations* : In recent times there is an increasing tendency to associate workers' and employers' organisations with the economic and social activities of the State at all levels of national life. This is expected to create, among other things, better labour-capital relations. As examples may be cited, the U.K. Industrial Organisation and Development Act (1947) and the Central Advisory Council (for labour) in India.

COLLECTIVE BARGAINING

In labour affairs, Collective Bargaining occurs when wages, fringe benefits and other terms of work are settled by negotiation between the employer or employers and a trade union. Collective bargaining is a method of increasing the bargaining power of workers. Wherever the system exists, wages show an upward trend and conditions of work become better. Some writers contend that collective bargaining produces lasting industrial peace and better labour-capital relations because the terms of work finally arrived at are based on mutual consent.

The principal defect of the system is that it results in a bilateral monopoly. Equilibrium under bilateral monopoly is indeterminate. Sometimes one or other of the parties takes up an attitude which prevents the settlement of any terms. A particular group of labourers may also form an alliance with a particular group of employers with the common object of keeping prices high and thereby squeezing the consumers to maintain wages at a high level.

Collective Bargaining has become the usual method of settling wages and terms of work in the big industries of U.S.A. The system is becoming popular in other countries also.

THE CONCEPT OF "FAIR WAGES"

In the majority of cases industrial disputes arise from a demand for higher wages. Experience shows that the free play of the forces of demand and supply leads to oppression of labourers on account of their low bargaining power. Also, a rate of wages which represents the equilibrium between demand and supply, and therefore justified by economic theory, may in practice be too low to provide the labourer with a decent standard of living. These considerations have led to a demand for the fixation of wages at a "fair" level by statute or by

some authority appointed by the state. The important question to be determined is what constitutes "fair" wages.

According to some writers, wages are not fair when they are, "less than what can be earned by similar workers in other industries". This definition assumes that in the "other industries" wages are fair, an assumption which may not be true. Moreover, it is difficult to compare workers of different industries. The definition is therefore unsatisfactory. It does not provide us with any method of calculating fair wages.

According to Pigou¹ wages are unfair when they are less than the value of the marginal physical product. According to some modern writers, wages are unfair when they are less than the marginal revenue product. Neither of these definitions provides a satisfactory method of determining fair wages because the marginal products cannot be calculated.

In some countries (e.g., Australia) the term "fair wage" is regarded as equivalent to "living wage". In the Australian Commonwealth Court of Conciliation (which judicially determines wage disputes) "living wage" was defined as one appropriate for "the normal needs, of the average employee, regarding as a human being living in a civilised community". To provide for the average workers' normal needs, wages must be sufficient "to ensure the workman, food, shelter, clothing, frugal comfort and provision for evil days".

Regarding fair-wages the Supreme² Court of India in 1974 has observed as follows.

"It is well settled that no industry can be allowed to carry on its business if it is unable to pay the minimum wage to its employees.

In fixing the bare minimum wage or subsistence wage, Industrial Tribunals will have to consider the position from the point of view of the worker the capacity of the employer to pay such a wage being irrelevant. The fair wage also must take note of the economic reality of the situation and the minimum needs of the worker having a fair-sized family with an eye to the preservation of his efficiency as a worker.

Wage fixation is an important subject in any social welfare programme."

ECONOMIC EFFECT OF MINIMUM WAGE LAWS

Inability of workers to secure adequate wages have led to the fixation of minimum wages in many countries by statute or otherwise.

¹ Pigou, *Economics of Welfare*, p. 531.

² *M/S Hindustan Hosiery Industries v. F. H. Lala and another*. A.I.R. 1974 S. C. 526.

Some writers object to this form of state interference on the following grounds.

1. Wages tend to equal the marginal product of labour. If the minimum wage fixed is less than the marginal product it is useless. If it is higher than the marginal product it is infructuous because the employer is unable to pay it.

2. A high minimum wage raises prices, curtails sales and reduces the volume of production and employment. These effects will be particularly large in the case of commodities with elastic demand.

3. Minimum wage laws are difficult to enforce. Some labourers are always found who conspire with the employer and secretly accept less than the minimum, rather than lose their jobs.

4. Employers will generally treat the minimum fixed as the maximum. Thus the result of minimum wage laws may be a levelling-down of wages rather than a levelling-up.

5. Minimum wage laws will prevent the employment of people who usually work at low wages, *e.g.*, old men, women and children. Such people will have to be supported by the state which will involve further taxation.

The arguments summarised above may be answered as follows :

1. The labour market is a very imperfect market. The bargaining power of labour is very low. Hence actual wages are generally lower than the marginal product. Fixation of minimum wages would make wages equal to the marginal product. This would happen particularly in the sweated industries.

2. The burden of higher wages can sometimes be passed on to the consumers in the form of higher price. This is possible when the demand for the commodity concerned is inelastic.

3. Under monopoly and monopolistic competition the profits are larger than normal. In such cases minimum wage laws will force the employer to part with some of his excess profits. The consequences will be beneficial not only to the workers employed by him but also to society.

Conclusion. Minimum wage laws are necessary whenever the rate of wages is too low. But such laws should be passed after careful consideration of the effects on total employment. Where wages are approximately near the marginal product such laws are unnecessary.

SOCIAL INSURANCE

The Welfare State. The term Social Insurance is used to describe schemes, undertaken by the state, to protect citizens from certain risks to which they are exposed. These risks are : sickness, maternity, accident, unemployment and poverty in the old age. The labourers, on account of their weak economic position, are particularly

vulnerable to these risks. Social insurance schemes are therefore specially beneficial to them. In modern times it is considered to be the duty of the state to give 'security' to all citizens through social insurance. A state in which comprehensive social insurance measures exist is called a Welfare State.

The International Labour Organisation, at a session held in Philadelphia in 1944, drew up a Social Security Programme and recommended its adoption in all countries. Sir William Beveridge in Great Britain drew up a similar plan and agitated for its adoption. It was largely through his efforts that the National Insurance Act of 1946 was passed.

The National Insurance Act of Great Britain is a comprehensive measure under which virtually every adult member of the community is insured against some or all of the following seven risks, viz., sickness, unemployment, widowhood, maternity, orphanhood, retirement and death. When any of these events occurs the person affected is granted benefit from a fund created by contributions from the employers, employees and the State. The benefits are given in the following forms :

1. Lump sum grants to dependants of men killed by accidents.
 2. Weekly doles to unemployed workers, persons aged above 65 who have no other means, widows, orphans and persons who are sick.
 3. Medicine and medical advice during sickness and maternity.
- In India the existing social insurance measures may be classified as follows :

1. The Workmen's Compensation Act of 1923, which provides for compensation payable by employers for accidents and deaths in course of employment.

2. Maternity Benefit Acts, for women workers in coal mines and certain other industries, which provide for leave and payment of allowances before and after childbirth.

3. The Employee's State Insurance Act of 1948. This Act, although based on the model of the English Act of 1946, is very limited in scope. It provides only for sickness, maternity and disablement benefits and is applicable only to the employees of a few selected industries. In India no provision exists for old age pensions or unemployment benefits.

Defects. Social Insurance makes life secure for the poor and has therefore been adopted by all the leading countries of the world. But there are certain defects which must be noted.

1. The employers are supposed to pay a part of the Insurance Fund. But if the labourers are weak and unorganized, the employers will reduce wages and thereby transfer the burden to them.

2. The employer's contribution reduces profits and this may reduce enterprise.

3. Too much security may lower the incentive to work and save on the part of labourers.

4. It is said that the medical benefits given under social insurance are not of the same high quality as might be obtained from private doctors.

5. There are great administrative difficulties.

6. The experience of Great Britain shows that the State has to bear the major share of the costs of social insurance. The costs are rather large and involve greater taxation.

Conclusion. The advantages of Social Insurance far outweigh the possible disadvantages. It is therefore the accepted policy in all advanced countries to adopt such measures.

RECOMMENDED READINGS

1. Cairncross, *Introduction to Economics*, Ch. 23.
2. Reynolds, article in Ellis, *Survey of Contemporary Economics*.
3. Samuelson, *Economics*, (9th edition), Chs. 7, 29.

EXERCISES

1. Discuss the functions of trade unions and consider the limitations on the power of trade unions to secure a lasting increase in wages in a particular industry. (C.U. B.Com. '59).

2. Under what conditions can a trade union raise the level of wages in a particular industry? (B.Com. '64, '65; B.A. '62, '65, '71; Compare C.A. May '69).

3. "Unions can raise real and money wages in a particular industry but the result will be less employment." Evaluate the degree of truth in the statement. (C.U. B.A. '66).

4. "If labour is paid according to its marginal product minimum wage fixation must either be superfluous or lead to unemployment" Discuss.

5. Can you suggest a method by which society can avoid the present conflict between labour and capital?

6. Why do industrial disputes arise? What are the principal methods of (a) prevention and (b) settlement of such disputes? Answer with reference to India. (Mysore. B.Com. '67).

7. What is Social Security? What progress has been made in India in the provision of social security? (Mysore. B.Com. '67).

8. Can a trade union raise wages in a particular industry through collective bargaining? (C.U. B.A. '74).

CHAPTER 20

INTEREST

DEFINITION

Gross and Net Interest. Interest is the "price", which the borrower has to pay for a loan. We can distinguish between Net Interest and Gross Interest. The *total* amount paid by the borrower to the lender as the price of a loan is called the Gross Interest. A part of the Gross Interest consists of the following items :

(i) *Payment for Risk.* Loans vary in risk according to the character of the borrower and the nature of the security. The greater the risk, the higher is the extra payment required by way of insurance.

(ii) *Payment for Work.* Extra charge are made when the creditor has to incur extra labour or inconvenience for collecting the money.

Gross interest, minus payments for the above two items, constitutes what is called True or Net Interest. Net Interest is the payment for the loan *as such*, irrespective of other considerations. The theories of interest propounded by economists deal with the true or net rate of interest.

DIFFERENCES IN INTEREST RATES

In the money-market we find a large number of interest rates, different rates being charged on different types of loans. The causes of the multiplicity of rates are stated below :

(i) The money-market is *not homogeneous*. There are different groups of lenders specialising in different kinds of loans (*e.g.*, agricultural loans, industrial loans, consumption loans etc.). Loanable funds do not move freely from one group to another.

(ii) Interest rates vary according to the *period of the loan*. Long term loans carry a higher rate because they keep the money blocked for a longer time.

(iii) Interest rates vary according to the *nature of the security*. Some securities are hard to realise, *e.g.*, land. Loans against such securities carry a higher rate. Some securities are easily realisable, *e.g.*, gold or government securities. Loans against them can be obtained at low rates.

(iv) As between different countries interest rates vary because the conditions of *demand and supply of loanable funds* are different in

different countries. The rates are not equalised because loanable funds do not move freely from one country to another.

Conclusion. For the reasons stated above, it is not accurate to talk about the interest rate. Actually here is a "family" of interest rates. It has been observed that (i) the different rates do not move up and down in the same way, and (ii) there is no tendency for the equalisation of the different interest rates.¹

CLASSIFICATION OF INTEREST THEORIES

Many theories have been propounded to explain how the rate of interest is determined. These theories can be divided into two groups : Real Theories and Monetary Theories.

1. **Real Theories.** The earlier writers looked upon interest as the income obtained from capital. They tried to relate interest to some real factor like productivity of capital, abstinence, time-preference etc. Real theories of interest can be subdivided under the three following heads :

(i) *The Marginal Productivity Theory.* According to this theory, the rate of interest is determined by the marginal productivity of capital. This theory follows from the marginal productivity theory of distribution as developed by J.B. Clark and Wicksteed. F. H. Knight is a modern exponent of the theory. The marginal productivity theory places greater emphasis on the *demand for capital*. It ignores the role of supply in interest determination.

(ii) *The Psychological Theories.* These theories try to connect the rate of interest to the psychological factors which determine the *supply of capital*. Different theories have been developed by emphasising different psychological factors. Senior, J. S. Mill and others thought that the supply of capital depended on "abstinence" and that the rate of interest was equal to the amount needed to induce the necessary abstinence on the part of savers. Bohm-Bawerk, Fetter, Mises and others thought that people prefer the present to the future and that the rate of interest measured such "time preference". The psychological theories overemphasise the forces underlying the *supply of capital* and ignore the role of demand in interest determination.

(iii) *The Demand and Supply Theory.* Irving Fisher and Marshall combined the marginal productivity theory and the psychological theories in an equilibrium theory, according to which the rate of interest is determined jointly by the demand for and the supply of capital. According to this theory the demand for capital is determined by

¹ Lutz, *The Structure of Interest Rates*, in *Readings in the Theory of Income Distribution*, p. 499.

marginal productivity and the supply of capital is determined by the abstinence or 'waiting' of the marginal saver.

2. **Monetary Theories.** The monetary theories of interest have been developed comparatively recently. These theories emphasise the role of "money" in interest determination. There are two monetary theories of interest: the Loanable Funds Theory and the Liquidity Preference Theory. According to the former theory, the rate of interest is determined by the demand and supply of *loanable funds*. Robertson, Ohlin and Scitovsky have put up different versions of the theory. According to the Liquidity Preference Theory, the rate of interest is determined by the demand and supply of *money*. J.M. Keynes is the originator of this theory. According to Hicks, Somers and others there is no fundamental difference between the Loanable Funds Theory and the Liquidity Preference Theory.²

Comment. There is no agreement yet, among economists, as to how the rate of interest is determined. Each of the theories mentioned above has its advocates. Until recently the Demand and Supply Theory of the Marshallian School was the most popular theory. Now it has been challenged by the Monetary Theories. Two controversies are now going on in interest theory: (i) Real Theories v. Monetary Theories and (ii) Loanable Funds Theory v. Liquidity Preference Theory.

SUMMARY OF INTEREST THEORIES

1. **The Abstinence Theory.** According to this theory interest is the reward for abstaining from immediate consumption of wealth. Since abstinence from consumption is disagreeable, the lender charges a price for doing so. This theory is criticised on the ground that the major part of capital comes from wealthy lenders and do not involve any sacrifice of consumption. Karl Marx refers to the rich saver as "the queer saint, that knight of the woeful countenance, the capitalist abstainer".

Marshall tried to avoid this criticism by substituting the term "waiting" for "abstinence". But even thus modified the theory only gives a reason why a price has to be paid for getting loans. The theory explains why capital has a supply price. It does not explain why capital is demanded.

2. **The "Agió" Theory or the Time Preference Theory.** This theory, worked out by Bohm-Bawerk and the Austrian School, seeks to

² H. M. Somers in *Readings in the Theory of Income Distribution*, p. 477 and S. C. Tsiang in *American Economic Review*, 1956, p. 539.

explain interest on the basis of time preference. Men prefer present satisfaction to future ones. It can be called the "impatience to spend". Rs. 100 now is not equivalent to Rs. 100 next year. Therefore, a man will relinquish Rs. 100 now only if (say) Rs. 105 is obtained next year. The extra Rs. 5 is the 'agio', which is interest. The agio measures time preference. This theory explains why capital has a supply price but does not tell us why capital is demanded. It is therefore a one-sided theory.

3. The Marginal Productivity Theory. According to this theory the rate of interest is determined by the marginal productivity of capital. The borrower uses the borrowed capital in production and obtains extra product. Therefore there is a demand price for capital.

The demand price diminishes as the amount borrowed increases because capital, like other factors of production, is subject to the principle of diminishing marginal productivity. Whenever the rate of interest is less than the marginal product of capital the borrower will use more capital, thereby reducing the marginal product and increasing the demand for capital. If the rate of interest is higher than the marginal product of capital, less capital will be used, thereby increasing the marginal product of capital. In the long run the rate of interest will tend to equal the marginal productivity of capital.

Criticism. The theory is one-sided, for it explains only why capital is demanded. It ignores the fact that capital has a supply price. The criticisms advanced against the Marginal Productivity Theory of Distribution can be used against the Marginal Productivity Theory of Interest. (See p. 261).

4. The Demand and Supply Theory. According to this theory, the rate of interest is determined by the *supply and demand of capital*. The supply of capital is governed by marginal forbearance (or waiting) and the demand for capital is governed by marginal productivity.

Supply : According to the demand and supply theory, the supply of capital depends on savings. Capital has a supply price because it is scarce in comparison to the amount required. In every community under ordinary circumstances there will be some amount of savings even if no interest is paid. But this amount is insufficient as compared to requirements and therefore, further savings must be induced by the offer of a reward for it. To the marginal savers, at least, saving involves abstinence, waiting, or postponement of consumption and a price must be paid for such sacrifice. According to the Demand and Supply Theory there is a direct functional relationship between the rate of interest and the supply of capital : the higher the rate of interest,

the greater the supply of capital. Therefore, the supply-schedule of capital can be represented by an upward sloping line, like SS_1 in Fig. 66.

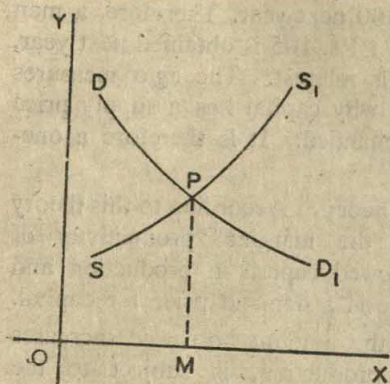


FIG. 66

Demand : Capital is demanded because it is productive. But the marginal productivity of capital falls as the quantity used increases. [This follows from the Law of Variable Proportions.] Because marginal productivity diminishes, the demand-schedule of capital can be represented by a downward sloping line, like DD_1 in Fig. 66.

Equilibrium : The rate of interest is determined at the point of equilibrium between the demand for and the supply of capital. This point is indicated by the point P in

Fig. 66. At this point the demand for capital is equal to its supply and the marginal productivity of capital is equal to the marginal supply price. At equilibrium the rate of interest is PM and the amount of capital supplied is OM .

Irving Fisher said that according to the Demand and Supply Theory, the level of interest is determined by (i) the people's impatience to consume and (ii) investment opportunities.

Criticisms. Keynes criticises the Demand and Supply Theory of interest as follows :

(a) It is based on the *assumption of full employment*. If all resources are fully employed, payment in the form of interest must be made to induce people to forego present consumption. But if unemployed resources are present there is no necessity for this payment. Thus, in an underemployed economy interest is not necessary to induce savings.

(b) The theory fails to take into account the *effect of investments on income*. Suppose that there is a rise in the rate of interest. This will lead to a decline in investment because investments will become less profitable. Less investment will mean less employment and less employment will result in a reduction of the national income. Reduction of income will automatically lead to reduced savings. Thus, a high rate of interest causes a *reduction* in the volume of savings, not an *increase* as the demand and supply theory of interest assumes. According to Keynes, the supply-schedule of capital cannot be represented by an upward sloping line (like SS_1 in Fig. 66).

(c) The supply schedule of capital is *not independent of the investment demand schedule*. If investment changes, income changes and

therefore the supply of savings also changes. To find the new savings schedule, after every changes of investment, the rate of interest must first be determined on the basis of liquidity preference and the supply of money. The explanation of interest must be sought from monetary factor and not from any 'real' factor like productivity.

(d) The Classical and the Neoclassical theorist assumed that savings and investments must be equal. But in modern societies the savers and investors belong to different groups. Therefore it is nowadays thought the level of interest fluctuate along with changes in savings and investments.

5. The Liquidity Preference Theory. According to Keynes, interest is a *monetary phenomenon*—a payment for the use of money. The rate of interest is determined by the *demand for and the supply of money*.

Demand for Money. Liquidity Preference. The demand for money comes from the desire to hold liquid assets of which money is the only perfect example. Money can be used for any purpose immediately and therefore people desire to hold money either as cash in hand or in the form of readily withdrawable demand deposits in banks. This desire Keynes calls "Liquidity Preference". The motives lying behind liquidity preference (or why people desire to hold money) can be analysed as follows :

A. The Transactions Motive : Liquid balances are necessary to bridge the interval between receipt of income and outlay. Income is received periodically. A man who gets his wages once a month must keep enough cash in his hands or in his current account to carry on his day to day purchases between one pay day and another. The same considerations apply to businessmen and industrialists. They also must keep some money in hand for their day to day transactions. The amount of money, required for this purpose, depends upon the general level of business activity.

B. The Precautionary Motive : Liquid balances are required to be kept in hand to provide for emergencies like sickness or accident. Everyone likes to keep some money in hand by way of precaution against such contingent liabilities and unforeseen expenses.

C. The Speculative Motive : Liquid balances are held with the expectation of finding better uses for them in the future. Opportunities for the purchase of goods or of bonds, on favourable terms, may come any time and everyone likes to keep some money at hand to avail himself of such opportunities.

Money kept as a store of wealth comes within this category. "The possession of actual money lulls out disquietude ; and the premium which we require to make us part with money is the measure of the degree of our disquietude." (Keynes).

Balances held from the Transactions or the Precautionary motive are little affected by the rate of interest. But those held from the Speculative Motive are particularly sensitive to it.

Lending involves surrender of liquidity. Since people desire liquid cash, they demand a price for surrendering liquidity. The rate of interest is nothing but "the reward for parting with liquidity for a specified period." (Keynes).

Relationship between Liquidity Preference and Rate of Interest.

If the rate of interest is high people's desire to hold liquid cash will be low : they will lend more.

Conversely, if the rate of interest is low, people will hold more liquid cash ; they will lend less. Therefore we can construct a schedule of liquidity preference showing how much liquid cash people will hold at different rates of interest. The schedule of liquidity-preference can be represented by a downward sloping curve like L_1 in Fig. 67. L_1 shows the functional relationship between the rate of interest and the amount of money people desire to hold (=liquidity-preference). Thus, when the rate of interest is

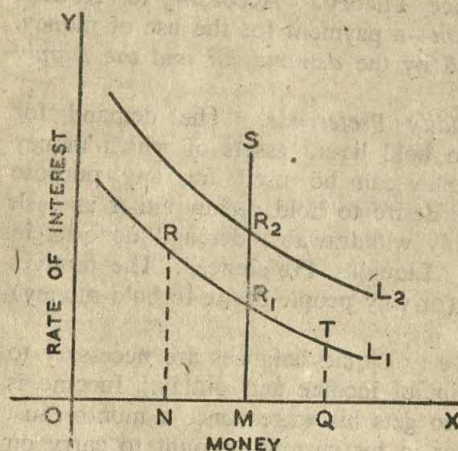


FIG. 67

NR people will desire to hold ON amount of money and if QT is the rate of interest, people desire to hold OQ . L_1 may therefore be regarded as the demand curve for money.

The liquidity preference schedule may change. Such changes may be indicated by shifting L_1 to a new position like L_2 .

Supply of Money. Liquidity-preference is one of the two factors which determine the rate of interest. The other factor is the supply of money. The supply of money in the community depends on the banking system. At any particular point of time the total supply of money is fixed and can be represented by a vertical line like MS in Fig. 67.

Equilibrium between the Demand for and the Supply of Money. In the figure given above L_1 intersects MS at R_1 . When the rate of interest is MR_1 the demand for money is equal to its supply. MR_1 is the equilibrium rate of interest, when L_1 is the liquidity function and OM is the supply of money. If the liquidity function changes to L_2 ,

money supply remaining unchanged, the rate of interest will change to MR_2 .

With a given liquidity function L_1 and a constant money supply MS, the rate of interest must settle at the point of intersection between L_1 and MS. This can be proved as follows. Suppose that the rate of interest becomes NR. At this rate people desire to hold ON money. But in the market there is OM money. Thus there is excess supply of money ($=NM$) seeking investment. The excess supply will force the rate of interest down towards MR_1 . Conversely, if the rate of interest is QT people will demand OQ while the available supply is OM. The excess demand ($=MQ$) will force the rate of interest up towards MR_1 . When the rate of interest is MR_1 there is no excess demand or excess supply of money and there will be no tendency for the rate to change.

Conclusion. According to Keynes, therefore, the rate of interest depends on the liquidity preference and the supply of money. The expected profitability of new investments (or the marginal efficiency of capital, as Keynes calls it) does not determine interest but is determined by it. What investments will be profitable depends on the rate of interest. Income does not determine interest but influences it indirectly because the amount of money required to be held for the Transactions Motive depends on income.

Criticisms. Some criticisms of the Keynesian theory are stated below :

1. Keynes does not explain clearly what he means by "money". Owing to its vagueness it has been said that the Keynesian theory is indeterminate.

2. Keynes dismisses as irrelevant the marginal productivity of capital. According to him, new investments are determined by the psychology of entrepreneurs and the current rate of interest. But since entrepreneurial activity is based on the productivity of capital it seems hardly proper to ignore it altogether.

3. Keynes ignores the inducements for saving and waiting. Jacob Viner said, "Without savings there cannot be any liquidity to surrender."

4. Keynes places undue emphasis on monetary phenomena. Somers³ points out that an individual having funds, has four choices before him : to invest in securities, to hold cash, to invest in production and to consume. Commercial firms have the first three choices and not the fourth. The decisions of individuals and firms regarding their choices in each of these areas must influence the rate of interest. The choice regarding investment in securities is determined by the demand and supply of securities. The choice regarding the holding

³ Somers, article in *Readings in the Theory of Income Distribution*.

of cash is determined by liquidity preference. The choice regarding investment in production is determined by the marginal productivity of capital. The choice regarding consumption is determined by time-preference. Hence we must say that the demand and supply of securities, liquidity preference, marginal productivity and time preference all play their part in determining the rate of interest. Keynes, however, takes into account only liquidity preference and the supply of money and ignores all the other factors.

5. Somers also points out that strictly speaking the rate of interest is affected in some degree by all other prices and economic quantities in the community ("all the elements expressed in the equations of the Walras-Hicks system of general equilibrium"). Hence both the Loanable Funds Theory and the Liquidity Preference Theory represents a *partial equilibrium analysis* of the determinants of the rate of interest.

Comments : On accounts of above short-comings it has been said that Keynes ignores the real factors of determination of interest.

6. **The Loanable Funds Theory.** According to this theory, the rate of interest is determined by the demand and supply of loanable funds. The expression "loanable funds" means money which is demanded and supplied in the money-market. The supply of loanable funds comes from (i) current savings, (ii) funds released from embodiment in fixed or working capital, (iii) reductions in cash balances or hoardings, if any, and (iv) the net additional bank loans. The demand for loanable funds comes from (i) requirements for new investments and (ii) increase, if any, in cash balances or hoardings. The rate of interest is positively related to the supply of loanable funds and negatively related to the demand for loanable funds. When the rate of interest rises the supply of loanable funds increases and the demand for loanable funds is reduced. When the rate of interest falls the opposite effects are produced. Therefore, a position can be reached where the rate of interest is such as to equalise the demand for and the supply of loanable funds. This rate of interest is the equilibrium rate.

The Loanable Funds Theory claims that it is better than the Liquidity Preference Theory, "because it corresponds more closely to the way in which the business world thinks of the determinants of the rate of interest and because it shows more directly the relation between the marginal efficiency of investment and the rate of interest".⁴

Monetary Theories of Interest (which include both the Loanable Funds Theory and the Liquidity Preference Theory) are superior to the real theories because (i) they recognise the part played by the

⁴ Haley in Ellis, *Survey of Contemporary Economics*.

banking system in the determination of interest (ii) they attach due importance to the demand for cash balances for precautionary and speculative purposes and (iii) they recognise the fact that the level of saving is positively related to the level of income.

CAN THERE BE A ZERO RATE OF INTEREST ?

A zero (or even a negative) rate of interest can be imagined under certain circumstances but in real life neither event is likely to occur.

A negative rate of interest is possible in a society where there is absence of law and order. In such a society saving (if any) have to be kept in the custody of men having the power to protect the savings. The payment made for such safe-custody may be regarded as "negative interest".

A zero rate of interest is conceivable in the following cases :

(i) when the whole income of a community is spent on consumption, there being no savings and no investment ; and

(ii) when the amount of capital in a community is so large that the marginal productivity of capital is zero.

The first case is that of a primitive economy where the question of paying interest does not arise because there is no saving and no investment. No such economy exists now.

The second case is theoretically possible in a mature economy in the long run. The classical economists thought that in the long run the rate of interest would fall. Keynes agreed with this view on the ground that in course of time capital accumulation would grow large and the yield from new investments would tend to diminish. The progressive diminution of yield would lead to a progressive fall in the rate of interest and ultimately it might be zero. Such a course of events can be described as the "Secular Stagnation of Capital".

It is very unlikely that the marginal productivity of capital will fall to zero in any community. There are certain dynamic economic forces which operate in almost every community and which keep up the demand price for capital. They are as follows :

- (i) new inventions and discoveries ;
- (ii) growth of population ; and
- (iii) destruction of capital assets by war and natural calamities like earthquakes.

We can conclude that the rate of interest may tend to fall but will never be zero.

THE JUSTIFICATION OF INTEREST

Philosophers of the past frowned upon interest-taking. Aristotle said that money cannot beget money and therefore interest is immoral. The Muslim religion prohibits the taking of interest.

The attitude of the earlier writers towards interest taking is accounted for by the fact that in ancient times loans were mostly taken by needy persons for consumption. Charging interest from such persons seemed harsh and oppressive. In modern times loans are taken mostly for production and therefore, interest is no longer considered either oppressive or immoral.

Interest can be looked upon two standpoints (i) as the price of a loan and (ii) as a source of income. Regarded as the price of a loan, interest can be justified on the following grounds :

1. A loan of capital or of money can be used for *productive purposes*. From the extra product, obtained by the use of the loan, the borrower can fairly be called upon to pay something to the lender.

2. Interest has an *economic function*. It serves to allocate savings (the supply of which is less than the requirement) among the competing borrowers. It ensures that loanable funds are used in the most productive undertakings. Even in a socialist economy the net productivity of resources applied to different uses will have to be calculated in order to determine the priority of schemes to be adopted by the state. The productivity-calculation, which may be called "accounting interest" after Pigou, corresponds to the rate of interest in a capitalist economy. The Gosbank of U.S.S.R. has an official bank rate although lending and borrowing in the capitalist sense do not take place in Soviet Russia.

3. Interest *ensures savings*. Without interest, the supply of savings will fall and investment and income will be reduced to very low levels.

There is less justification for interest as a source of income. Interest is one of the major props of capitalism. It yields a large part of the income of the idle rich and is one of the chief causes of inequality of incomes. The Marxian view is that "interest is simply a bourgeois device for exploitation." If one agrees with Proudhon and others that property is theft, interest-taking is unjustified. But, if the system of private property is accepted then interest, which is income from ownership of capital and loanable funds, must be allowed. Modern opinion, however, holds that extreme inequalities of income are undesirable. Therefore the State can and should place legal limits on the rate of interest. Laws against excessive interest are justified even though the taking of interest is not prohibited.

RECOMMENDED READINGS

1. Keynes, *General Theory of Employment, Interest and Money*, Chs. 13 and 14.
2. *Readings in the Theory of Income Distribution*, section on Interest.

3. Samuelson, *Economics*, (9th edition) Ch. 30.
4. Ryan, *Price Theory*, Ch. 7.
5. Cairncross, *Introduction to Economics*, Ch. 24.
6. Benham, *Economics*, Ch. XXVII.
7. Liebhafsky, *The Nature of Price Theory*, Ch. 15.

EXERCISES

1. What do you understand by 'interest'? Account for differences in the rate of interest on different types of loans. (C.U. B.Com. '74).
2. How is the rate of interest determined? (C.U. B.A. '65).
3. "Interest rates are the price, not of savings but of parting with liquidity." Explain and comment upon this statement. (C.U. B.Com. '64).
4. Discuss the liquidity preference theory of the rate of interest. (C.U. B.A. '61, '63; Cf. C.A. Nov. '69; '70).
5. Account for the difference in rates for different kinds of loans. Discuss the Keynesian theory of interest. (C.U. B.Com. '70).
6. Examine the relationship between the rate of interest and the quantity of money. (C.U. B.A. '66).
7. Discuss the statement that the rate of interest is determined by the demand for, and the supply of money. (C.U. B.Com. '66; '72).
8. Discuss the statement that the rate of interest is determined by the demand for and the supply of loanable funds. (C.U. B.A. '59).
9. Why is interest paid? How is its rate determined? (G. U. & D. U. '67, '69; compare C.A. May '64).
10. Explain the relationship, if any between liquidity preference and the rate of interest. (C.U. B.Com. '68).
11. Define the concept of interest. Why is interest paid? Give reasons for your answer. (C.U. B.A. '68).
12. Distinguish between the different motives for holding money. Which of these motives gives rise to the phenomenon of "hoarding" money? (C.U. B.A. '72).

CHAPTER 21

PROFITS

DEFINITION AND NATURE OF PROFITS

The term Profit is used to denote the income earned by the proprietors of a business or industrial enterprise. Such income is of a residual character. Whatever be the form of business organisation (single entrepreneurship, partnership or joint stock company) the proprietors get what is left after paying all the factors hired by them.

"Profit", said Taussig, "is a mixed and a vexed income". It is a 'mixed' income because the entrepreneur gets his earnings from a variety of sources. It is a 'vexed' income because economists are not agreed as to which of these earnings should be included within the definition of profits and what determines the quantum of such earnings.

The term Profit may be used in a *narrow sense* to include only the income attributable to the exercise of a purely entrepreneurial function like risk-taking, uncertainty-bearing or innovation. The term may also be used in a *wide sense* to include the whole of the residue remaining with the enterprise after meeting all expenses. Walker, Knight, Schumpeter and others are in favour of using the term Profit in the narrow sense, while Marshall, Robertson and certain other English economists are in favour of using the term in the wider sense. Robertson¹ observes that, "it seems most convenient to use the word in a comprehensive sense, to denote the composite income of the composite factor 'Enterprise'".

Gross Profits. In the colloquial sense 'profit' means the whole of the *net* income earned by the entrepreneur or a business enterprise. Economists use the term Gross Profit in this sense.

Gross Profit = Total Revenue — Total Costs (including Depreciation).

Gross Profit may also be described as an Accounting Residual because it is the residue that remains after all costs (including depreciation charges) have been accounted for.

Constituent Elements of Gross Profits : Gross Profit or the Accounting Residual is a mixture of diverse elements. Suppose that a person starts a business with some capital of his own and manages it with a hired staff. Suppose that at the end of a year the difference between his total revenue and his total expenditure in running the

¹ Robertson, *Lectures*, Vol. II, p. 97.

business amounts to Rs. 10,000. This is his Gross Profit in the economic sense. This Gross Profit will include earnings from any one or more of the sources mentioned below. These are the constituent elements of profits.

1. *Price of factors* supplied by entrepreneur himself, i.e., his own capital or land. These are interest and rent, not profit.

2. *Wages of superintendence*, i.e., the income which the entrepreneur might have himself earned if he had taken up a salaried post elsewhere.

3. Income from '*risk taking*' and '*uncertainty-bearing*'. Production involves varying degrees of risk—the output may not be sold. In the case of ordinary staple commodities the risk is very small. In the case of new products the risk is large. The entrepreneur undertakes the risk only when the price of the product is expected to be high enough to compensate for the possible loss if the product is not sold. If finally a profit emerges, part of it is attributable to risk-taking and uncertainty-bearing.

4. Income from *Innovations*. Schumpeter² used the term "innovation" to mean the introduction of a new product, a new process or a new market. The first employer or employers who innovate, get extra income which lasts till the product, process or market becomes common to all. (See p. 279).

5. Income from *monopoly power*, if any. If the output of any commodity is under the sole control of an entrepreneur, he earns extra income which is a part of his gross profit. Monopoly power arises from licences, patents and copyrights; secret processes; ownership of scarce resources; and trade combinations. Monopolists earn extra income by limiting supply and creating an artificial scarcity. According to Samuelson, monopoly profits are attributable to "contrived scarcities".

6. Income from *product-differentiation*. When a product is successfully differentiated from other similar products, by advertisements or otherwise, it yields additional income which is a part of the gross profit. (See p. 167).

7. *Windfall incomes*. Windfall profits are unexpected profits due to sudden rise of prices which sometimes occurs as a result of changes of fashion, war or inflation. Such profits are usually temporary.

Net Profits. The earnings included within items 1 and 2 of the above list are wages, interest or rent. Thus if the term Profit is used in a wide sense to include the entire earnings of an entrepreneur, it will include some items which are wages, interest or rent.

²J. A. Schumpeter, *The Theory of Economic Development*, Ch. II.

The earnings of the entrepreneur, coming within the remainder of the above list (*i.e.*, items 3 to 7) constitute the earnings of business ability as such—they are the rewards of the entrepreneurial function. Modern writers, following Walker and other American economists, use the terms Net Profit and Pure Profit to mean the income derived from these items. Thus, we can say that net Profit or Pure Profit in the economic sense is obtained by deducting from Gross Profit the remuneration attributable to the entrepreneur's own labour, capital and land.

The price of the factors supplied by the entrepreneur himself and the wages of his own labour ought to be regarded as part of the costs of the enterprise. If the entrepreneur had not provided them himself it would have been necessary to hire them at the market price. The portion of the entrepreneur's income which can be attributed to these heads may be called Implicit Costs or Imputed Costs. They are not 'actual' costs because they are not usually shown separately as such in the account books of the entrepreneur. Such earnings may also be called Opportunity Costs because the entrepreneur might have earned them by hiring out his factors and/or his labour to some other enterprise. In fact, the imputed costs of these items must be derived by finding out how much the entrepreneur might have earned from alternative uses of his factors. It can therefore be said that,

Net Profits=Gross profit—Opportunity Cost (or Imputed Cost).

Differences between Profit and other Sources of Income. The fundamental difference between Organisation and the other Factors of Production is that the entrepreneur is his own master. He cannot be hired, while the other factors can be. The result of this difference is that profit differs materially from the other sources of income, *viz.*, rent, wages and interest. The differences are as follows :

1. Profit is a residual income. The entrepreneur gets what is left after paying the other factors of production. Rent, wages and interest are contractual incomes, their amount being fixed by contract.
2. Profits fluctuate more than rent, wages and interest.
3. Profits may sometimes be negative (when the entrepreneur incurs losses). Rent, wages and interest cannot be negative.

Profits of the Single Entrepreneur and Profits of Joint Stock Companies. In the case of the single entrepreneur, profits at the end of the year is simply the difference between the gross receipts and the outgoings. Such profits include the income attributable to the entrepreneur's own land, labour, and capital. Marshall's concept of profits was based on the single entrepreneur's profit as calculated above. According to general mercantile usage, profit is interpreted in this sense.

In the case of a joint stock company there can be no question of the proprietor's own land, labour and capital. The proprietors of a joint stock company are the shareholders who are not required to supply land or labour to the company or lend money to it. If any of the shareholders actually do so, they get separate payment for it. Therefore, company profits are nearer to the concept of 'pure' profits.

Accounting Profits and Economic Profits. Accountants use the term Net Profit to mean the difference between the total revenue and the total paid out costs and depreciation charges. This is the residue shown in the Profit and Loss Account. Thus accountant's net profit = economist's gross profit. Accountants do not recognise opportunity costs.

Opportunity costs are of significance in connection with the entry and exit of firms into and from an industry. An entrepreneur will give up his business if he cannot earn at least the opportunity costs of his own factors of production. He will enter an industry where he can earn more than the opportunity costs. The accounting concept of profits, because it ignores opportunity costs, is not significant to economists.

Profits under Socialism. In a socialist state productive enterprises are run directly by the State. If the products are distributed among the consumers through ration-quotas, there is no question of profits. If, however, the socialist state uses money and sells goods to the consumers at a price, there may be profits. A profit will emerge whenever the prices are fixed in such a way that the total sale proceeds exceed the total costs (wages, depreciation etc.). The State may deliberately keep prices higher than costs with a view to raising revenues for public expenditure. Socialism does not necessarily eliminate profit. But it eliminates the private appropriation of profit.

THEORIES OF PROFIT

There are a large number of theories regarding profits. According to some of these theories, the entrepreneur earns profits *because he performs certain functions*. Opinions, however, differ as to which of these functions determine the amount of profit. According to Hawley and many English economists, the main function of the entrepreneur is *risk bearing* and profit is the reward earned for it. According to Knight, the entrepreneur's main function is *uncertainty bearing* and the amount of profit depends on the degree of uncertainty bearing undertaken. According to Taussig, profits are the *wages of business ability* which term includes all the functions performed by the entrepreneur, viz., *risk bearing, uncertainty bearing and management of the undertaking*. Schumpeter thinks that profit comes from inno-

vation, which means the introduction of a new product, a new process or a new market.

There are many writers who think that profit cannot be related to any entrepreneurial function. For example, Walker thinks that profit is a form of *rent*. J. B. Clark and others are of opinion that profit arises from *dynamic changes* in the economy. Karl Marx thinks that entrepreneurs get profit because the *legal system* of a capitalistic country (laws relating to private property etc.) enables a class of people (the capitalists) to appropriate the surplus product of labour. Some modern writers also emphasise the *institutional nature* of profits. Thus Triffin³ observes, "Profits are dynamic in origin and institutional in their appropriation."

The leading profit theories are explained below.

I. The Risk Theory. The Risk Theory of Profits was formulated by F. B. Hawley. It was supported by Marshall.

According to the Risk Theory, the entrepreneur earns profits because he *undertakes risks*. The manufacturer produces goods with a view to selling them. If the goods are not sold there is loss. No entrepreneur will incur this risk unless there is a prospect of corresponding gain. Profit is the reward of taking such risks. The reward is a necessary inducement without which entrepreneurs will not work.

The degree of risk varies in different industries. Also, within the same industry different entrepreneurs undertake different degrees of risk according to their ability and inclination. The quantum of profit must be high enough to attract the marginal risk-takers, otherwise the supply of business ability will fall and production will diminish. Profit, as a reward for risk-taking, is therefore a part of the normal cost of production.

Criticisms : The following arguments may be advanced against the Risk Theory.

1. The earnings of an entrepreneur are not entirely due to risk-taking. Some part is due to superior organisational ability, existence of monopoly power or just chance and good luck.

2. According to the Rent Theory of Profits, the income from organisational ability is a form of wages and the other types of earnings, such as those from innovation or product differentiation, disappear in the long run. According to this theory, profits arise because different entrepreneurs have different abilities and not because they take risks.

3. There are many individuals who prefer independent business to salaried posts even if the net income is lower. To such individuals, business risk is a subordinate factor in their choice of occupation. The

³ Triffin, *Monopolistic Competition and General Equilibrium Theories*.

amount of profit earned is therefore, not related to the amount of risk undertaken.

4. Some risks are measurable and can be guarded against by insurance, *e.g.*, fire and accident. Some risks can be avoided by the method of grouping. The manufacturer, for example, can produce several varieties of goods setting off the loss from some varieties against gain from the others. The able entrepreneur can always reduce risks in various ways. Whenever he reduces risks he earns more income. Carver, therefore, argues that profits are earned because risks are 'avoided', not because risks are 'undertaken'.

Conclusion : The Risks Theory is not a complete explanation of profits although it must be admitted that entrepreneurs undertake risks and expect a reward for doing so. A part of their earnings is due to this element.

II. The 'Uncertainty-bearing' Theory. According to Knight,⁴ the main function of the entrepreneur is to act *in anticipation of future events*. He produces goods in anticipation of demand and purchases goods in anticipation of resale. Some future events can be insured against, *e.g.*, fire and accident but others are completely uncertain and cannot be insured against, *e.g.*, changes of fashion or taste. The term Risk covers the first type of events (insurable events) and the term Uncertainty covers the second type (non-insurable events). Knight argues that risk-taking cannot produce profits because the entrepreneur can guard himself against risks by taking out a suitable insurance policy. But uncertain events cannot be guarded against in that way. When an entrepreneur takes upon himself the burden of facing a (non-insurable) uncertain event, like the future demand for a commodity, he expects a remuneration. The remuneration is profit.

According to Knight's theory, uncertainty-bearing is essential to production; therefore, it is a factor of production and the reward for it is part of the normal cost of production. Also, uncertainty-bearing will be undertaken only if money is earned for it. Therefore it has a supply price. *Profit is the reward for bearing non-insurable risks or uncertainties* and the amount of profit earned depends upon the *degree of uncertainty-bearing*.

Criticisms : The theory is an improvement upon the risk theory. But it is not a satisfactory explanation of profits because of the following reasons :

(i) Uncertainty-bearing is only a part of the duties of the entrepreneur. He has other duties also, *e.g.*, organisation and bargaining.

(ii) Uncertainty-bearing is a psychological concept (like abstinence or waiting) which can be considered a part of the real cost of production. The supply of a factor of production does not depend on real

⁴ Knight, *Risk, Uncertainty and Profit*.

costs but on opportunity costs. Hence, uncertainty-bearing does not determine the supply price of business-ability.

(iii) A part of profit arises from imperfections of competition. Thus if there are obstacles to the entry of new firms into an industry, the existing firms will earn additional incomes. Such incomes are not due to uncertainty although they are commonly included within the term profits. Monopoly profits come within this category.

(iv) It has not been found possible to measure uncertainty in concrete terms. Therefore, the uncertainty-bearing theory cannot explain the quantum of profits except in a vague and general way.

Conclusion: The Uncertainty Bearing Theory does not explain all the elements of profits. But there is no theory of profits which does so. The current trend in economic thinking is to look upon the Uncertainty Bearing Theory as the *least unsatisfactory* of all profit theories. Therefore many economists believe in it.

Ryan⁵ observes that there are three causes of profits in the long run. (i) Some entrepreneurs are protected from competition by barriers created by law or otherwise. (ii) Some are similarly protected by indivisibilities of plants and processes. (iii) All entrepreneurs are not equally uncertain about the future. Profits explained by (i) and (ii) are of the nature of economic rent. Those explained by (iii) are pure profits.

III. The Rent Theory. The Rent Theory of Profits was developed by Walker and other American economists. The Rent Theory is based upon the concept of Pure Profit. The actual earnings of an entrepreneur come partly from his ability and partly from the ownership of capital, land and other factors of production. Only the former is called Pure Profit. Thus,

Pure Profit = Gross Income of the entrepreneur
 — (interest on his own capital + rent of his own land
 and buildings + wages of his work)
 = the net income of entrepreneurial ability.

The pure profit of an entrepreneur, as defined above, depends upon the difference between his ability and the ability of the marginal producer in the market. The marginal producer is one who earns only his expenses of production, including the cost of factors supplied by himself. The market price is equal to the cost of production of such an entrepreneur and he earns no profit. An entrepreneur with superior ability can produce goods at a cost which is less than the market price. The difference between his cost and the market price is his profit. Thus profit is earned only by those entrepreneurs who have abilities superior to those of the marginal producer. They may

⁵ Ryan, *Price Theory*, p. 319.

be called the intra-marginal producers. Also, the amount of profit earned by an entrepreneur depends on the extent of his superiority over the marginal producer.

The above view of profits makes *profit analogous to rent of land*. The theory assumes that there are various grades of business ability just as there are various grades of land. The rent of a plot of land depends on the extent of its superiority over the marginal land. Similarly, the pure profit of an entrepreneur depends on how much superior he is to the marginal entrepreneur.

A consequence of the similarity between profit and rent is that, like rent, *profit does not determine price but is determined by it*. Pure profit is the difference between price and cost. Profit increases when due to any reason, the difference increases. In the converse case, profit decreases. Thus according to the Rent Theory, profit is like rent and does not enter into price.

There is, however, a significant difference between rent and profit. Rent is a permanent income because the supply of better grade land is inelastic both in the short run and the long run. But the supply of entrepreneurship is elastic in the long run. In course of time new entrepreneurs come into business. The effect of such new entry is to increase production, lower prices and reduce the income of all firms in the industry. Pure profit tends to become smaller and smaller until *it is reduced to zero*. In the long run the entrepreneur earns only his wages of superintendence and the remuneration of factors supplied by himself.

Criticisms : The Rent Theory can be criticised as follows :

1. It overlooks the elements of risk and uncertainty. Every entrepreneur normally undertakes some amount of risks. If he gets nothing by way of compensation for it, he will not continue production or business. The normal rate of profits cannot therefore be zero.
2. The rent theory does not explain how the amount of true profits is determined.
3. Profit is not an unearned surplus like rent. A positive rate of profit is essential to keep entrepreneurs working.

IV. The Marginal Productivity Theory. According to this theory, profit depends upon the *marginal revenue productivity* of business enterprise. Entrepreneurial ability is a factor of production. The price of such ability (=profit) is determined in the same way as the prices of other factors are determined, *viz.*, by the additional product which the entrepreneur creates by his ability.

Criticisms : The marginal productivity theory of profits can be criticised on the following grounds :

1. There can be only one entrepreneur in an enterprise. So we

cannot calculate the marginal revenue productivity of entrepreneurship so far as a single firm is concerned.

2. We can, in theory, calculate the marginal revenue productivity of entrepreneurship in an industry by finding out how much is added to the total output of an industry by the addition of one more entrepreneur. But the figure obtained will be of little significance because entrepreneurship is not homogeneous. Different entrepreneurs have different abilities and their earnings are not equalised by the principle of substitution. So marginal revenue productivity cannot determine profit.

3. The theory cannot explain monopoly profits because in this case the number of entrepreneurs cannot be varied in order to find out the marginal revenue product.

4. The theory cannot explain windfall profits or chance gains. Such profits do not depend on ability.

5. The earnings of different entrepreneurs vary widely. The income of superior entrepreneurs contain an element which can be called the rent of ability. Superior entrepreneurs earn more because business ability of a high order is scarce. Their earnings are analogous to the rent of high grade land. Thus we find that profit includes elements which cannot be explained by the marginal productivity of entrepreneurship.

V. The Dynamic Theory. According to J. B. Clark profit is a *result of change*. In a static society where the consumer's behaviour and the producer's technology are fixed, prices cannot differ from costs and the normal rate of profit is zero. The entrepreneur earns only the wages of superintendence and the prices of factors supplied by him. In a dynamic society *changes occur*, some of them being the result of the entrepreneur's own effort, e.g., introduction of new techniques and new products. Other types of change are increase or decrease of population, alteration of consumer behaviour, increase in the total stock of capital, new inventions etc. Dynamic changes lead to the emergence of a difference between cost and price. The difference is profit. Thus profit can only occur in a dynamic society. Schumpeter has similar views.

Criticisms : The dynamic theory can be criticised as follows :

1. Some changes can be anticipated and insured against. Under perfect competition such changes will not cause any difference between price and cost. Therefore change, as such, cannot produce profit.

2. Actual society is always dynamic. To say that profit is the result of dynamic changes is merely to say that profit exists.

3. The theory takes no account of the fact that business ability, like any other factor of production, has a supply price.

4. The dynamic theory does not explain the quantum of profits.

PROFIT AND COMPETITION

Perfect Competition. Under perfect competition, Pure Profit cannot exist. The term pure profit means that part of the earnings of the entrepreneur which is attributable to the exercise of his entrepreneurial functions, *viz.*, risk taking, uncertainty bearing, innovations, product differentiation, etc. Pure profit does not include the wages of superintendence and payments due on account of factors supplied by him to the enterprise.

Perfect Competition is an imaginary word created by economists. Under it there is assumed to exist many competitors, free entry, homogeneous (identical) output, perfect mobility of the factors of production, perfect knowledge, etc. The assumption of perfect knowledge implies that everybody knows what will happen in the future. Therefore there is no risk and no uncertainty. Also there is no innovation, because by an innovation something new is introduced (a new product or a new variety of an older product, etc.). This will make competition imperfect because the homogeneous product assumption will no longer be applicable.

Under perfect competition if any producer earns anything more than the wages of superintendence and the prices of the factors supplied by him, other producers will enter the industry in the long run. Thereupon the total output will increase, price will fall and the extra earnings will disappear. The producer will of course continue to earn his wages and prices, otherwise he will abandon the business. Hence, under perfect competition there will be no (pure) profit.

"Perfectly free entry of numerous competitors would, in a static world of perfect knowledge, bring price down to cost and squeeze out all profits above and beyond competitive wages, interest, and rent." (Samuelson).

"Profits are absent in the state of perfect competition because each entrepreneur has equal opportunities and equal capacities to exploit them." (Ryan).

Imperfect Competition. Under imperfect competition, risk, uncertainty, monopoly, barriers to entry, innovation, product differentiation and similar other factors are present. Hence, earnings in excess of wages of superintendence and the prices of the factors supplied by the entrepreneur, *i.e.*, pure profits, may continue to exist both in the short run and in the long run. "There is a presumption, therefore, that positive profits are a consequence of imperfect competition." (Ryan).

Samuelson says that the concept of profit relates to "dynamic innovation and uncertainty-bearing, and to the problems of monopoly and incentives".

In real life perfect competition is not found and imperfect competition is the normal situation. Hence entrepreneurs in real life earn positive profits (and sometimes losses).

How profits are determined in a competitive market.—See the different theories of profit.

NORMAL PROFITS

According to the Rent Theory of Walker and the Dynamic Theory of Clark, pure profit tends to be zero in the long run. Profit, in their opinion, is a short period phenomenon, its amount depending on the particular circumstances of the case. These theories, however, are not accepted by all writers.

According to Marshall, a positive rate of profit must exist in order to attract an adequate supply of business ability. Profit, according to him, is *the supply price of business ability*. Normal profit, in any industry, is the reward earned by the entrepreneur when the industry is in equilibrium. Normal profit is a part of the normal cost of production.

An industry is said to be in equilibrium when there is no tendency towards change of output either by change of scale or by change in the number of firms in the industry. Mrs. Robinson therefore defined normal profit as that rate of earnings at which (i) there is no tendency to expand or contract production by the individual firm; (ii) new firms do not enter; and (iii) none of the old firms go out of production.

DO PROFITS TEND TO EQUALITY?

Profits vary more widely than any other source of income. In industries where risk or uncertainty is great (e.g., ship building and airways) some firms make large profits, others incur losses. But average earnings in such industries must be high enough to compensate for the comparatively greater risks of failure. In industries of the routine type (e.g., public utility services or retail stores) the risk is small and the average earnings are small. Thus, as between different industries there is no tendency towards equality of profits in the short run. As between different firms within the same industry profits vary in the short period according to business ability. Some firms are prosperous, some are always near to insolvency.

In the long run, however, there must be equality of profits as between different industries. If they are not equal, business ability will move from a low profit industry to a high profit industry and high profit firms will expand at the cost of low profit firms. Thus, equality of profits is a condition of long run equilibrium.

But the so-called long run equilibrium exists only in imagination. Actual life is dynamic. Economic forces are constantly changing and creating various maladjustments which make prices and costs vary in different degrees in different firms and industries. Therefore in actual life there is hardly any tendency towards equality of profits.

RECOMMENDED READINGS

1. *Readings in the Theory of Income Distributions*, Section on Profits.
2. Samuelson, *Economics* (9th edition), Ch. 31.
3. Ryan, *Price Theory*, Ch. 10.
4. Benham, *Economics*, Ch. XXIX.
5. Cairncross, *Introduction to Economics*, Ch. 24.

EXERCISES

1. Discuss the theories of profits. (Mysore B.Com. '68).
2. Why do profits arise? How does profits differ from other kinds of income? (C.U. B.Com. '69).
3. Discuss the statement that profits are the reward for risk taking. (C.U. B.Com. '65, '71).
4. How does profit differ from other kinds of factor income? Explain the relation between profit and risk. (C.U. B.A. '68).
5. Examine the view that the modern theory of profit regards the entrepreneur's contribution to the process of production as that of bearing non-insurable risks and uncertainties. (C.U. B.A. Hons. '62).
6. Discuss the constituent elements of profits. "Profits are like Rent and do not enter into Price." Do you agree? Give reasons for your answer. (C.U. B.Com. '62).
7. What are the different elements of profit? Explain the influence of "Innovation" on profit. (C.U. B.A. '62).
8. Can profit exist under perfect competition? (C.U. B.A. '65).
9. Distinguish carefully between profits, rent and interest. For what functions of the entrepreneur does he earn profits? (C.U. B.Com. '64).
10. Discuss the part played by risk and uncertainty in the determination of profits. (C.U. B.A. '64).
11. "Profit is not simply a fourth factor return like wages, interest or rent. Profit is part of these factor returns." Explain. (C.U. B.A. '65).
12. Write a short note—Normal profits. (C.U. B.A. '72).
13. Distinguish between insurable and non-insurable risks. Why is this distinction significant for the theory of profits? (C.U. B.A. '73).
14. Do you agree with the view that profits are a reward for uncertainty bearing? Support your answer with arguments. (C.A. Final Nov. '73).

CHAPTER 22

RENT

DEFINITION

Landlord's rent. In colloquial language, Rent means the payment made by a tenant to his landlord for the use of land and houses. In Economics the term has a different meaning.

Producer's Surplus. The term Rent is used in Economics to mean Producer's Surplus. If the total return obtained by selling the products of a plot of land exceeds the total costs of cultivation (including normal profits) the owner of the plot earns a surplus income. This surplus is called Rent in Economics. David Ricardo, one of the founders of the Classical School of Economics, sought to prove that the actual rent paid by a tenant tended to equal the economic rent as defined above. "The essence of the conception of rent is the conception of a surplus earned by a particular part of a factor of production over and above the minimum earnings necessary to induce it to do work."—Joan Robinson.¹

Generalised Rent. The concept of economic rent may be *widened to include any surplus* (of return over cost) obtained by any factor of production.. The quantum of such surplus is equal to *the difference between the actual income of the factor and the minimum income necessary to keep the factor in use*, i.e., its normal remuneration or profits. Such a surplus arises when the supply of the factor is scarce in relation to demand. "Although first worked out in connection with the services of land (hence the name—economic rent) the concept applies to any factor of production which does not have a perfectly elastic supply".²

THE RICARDIAN THEORY OF RENT

Summary. David Ricardo sought to explain rent on the basis of the fact that land is heterogeneous in quality. Some plots possess superior advantages (greater fertility or better situation) which make the cost of production low and yield a surplus to the owner. This surplus is rent. The salient features of the Ricardian Theory of Rent can be summed up as follows :

¹ Joan Robinson, *Economics of Imperfect Competition*.

² Boulding, *Economic Analysis*, p. 230.

1. *Rent is a Differential Return.* The rent of a plot of land tends to equal the difference between its yield and the yield of marginal plots (*i.e.*, plots which yield just enough to pay for the expenses involved in cultivation). How the amount of rent is determined is illustrated by the following example.

Suppose that there are three plots of land each producing 20 mds. of wheat. Suppose that the cost of production per md. in plot A is Rs. 8, in plot B Rs. 10 and in plot C Rs. 12. If the market price of wheat is Rs. 8, plots B and C will not be cultivated. Plot A will be cultivated but the owner's total receipts will be equal to the total cost and there will be no surplus or rent. Suppose that the market price rises to Rs. 10. Now plot B will be brought under cultivation. The owner of plot A will now receive $Rs. 10 \times 20 = Rs. 200$ while his cost of production remains at $Rs. 8 \times 20 = Rs. 160$. He gets a surplus income of Rs. 40. This surplus is rent. If the market price rises still further and becomes Rs. 12, Plot C will be brought under cultivation. Plot A's surplus now increases to Rs. 80. Plot B gets a surplus of Rs. 40. Plot C gets nothing more than cost of production. Plot C is the marginal land or the no-rent land. Hence, economic rent is equal to the differential surplus obtained by superior lands owing to lower costs of production.

2. *Rent is due to the Original and the Indestructible Powers of the Soil.* The lower cost of production in the superior or rent-earning land is due to greater fertility or better situation. According to Ricardo every plot of land is endowed by nature with certain 'powers' which are original and indestructible. The yield obtained from any plot is determined by the extent of those powers. He therefore laid down that, "Rent is that portion of the produce of the earth which is paid to the landlord for the original and the indestructible powers of the soil".

3. *Rent is due to the Niggardliness of Nature.* The differential surplus, which is called rent, arises whenever inferior lands have to be cultivated. If the supply of good quality land was adequate it would not have been necessary to cultivate inferior land. Rent arises because good quality land is scarce. Hence, according to Ricardo, rent is not due to the bounty of nature but to her "niggardliness".

4. *Rent does not enter into Price.* The market price of an agricultural commodity is equal to the cost of producing it on the marginal land (price=marginal cost). Rent, in the Ricardian sense, is a surplus above cost. Therefore, rent does not determine price. It is price which determines rent.

5. *Actual Rent tends to equal Economic Rent.* If the differential surplus obtained from a plot of land is Rs. 10, its owner will be able (under perfect competition) to let it out for Rs. 10. The hirer loses nothing for he gets a normal return (his total receipts=his total

costs, which by definition includes normal profits). Hence actual rent tends to equal economic rent.

6. *Rent is Unearned Income.* From the Ricardian Theory it follows that rent is not due to any labour or effort on the part of the landowner. Rent arises whenever the market price is higher than the average cost of production. Therefore, rent is an "unearned income". The abolition of such income, by taxation or otherwise, will not reduce the supply of land.

Criticisms of the Ricardian Theory. The Ricardian Theory of Rent has been subjected to a number of criticisms. They are stated below.

1. Carey and Roscher criticised Ricardo on the ground that *people do not first cultivate the best grade land, then the second grade land and so on.* [See the example given above.] They argued that lands which are most convenient (owing to nearness of towns and existence of security) are cultivated first. This criticism is irrelevant because the order of cultivation is immaterial to the Ricardian Theory. What is necessary is that there must be differences in the yield from different lands.

2. Some writers say that *there are no original and indestructible powers of the soil.* This is probably true if we take only fertility into account. Bad use can destroy fertility, application of capital may increase it. But there are certain other elements of land which cannot be altered by man, *e.g.*, the amount of rainfall or sunshine which it receives and its situation. These are what Ricardo meant by the term "powers of the soil".

3. Ricardo did not define term 'fertility' strictly. Ricardo assumed that the cultivator was efficient. But fertility is relative to the ability of the cultivator and conditions of cultivation.

4. *The no-rent land of Ricardian Theory is never met with in actual life.* In answer to this criticism, it may be said that the actual rent paid includes payment on account of interest for capital applied on the land in question. In such cases although actual rent is paid the economic rent may be zero.

5. Ricardo's corollary *that rent does not enter into price is not true* under certain circumstances. (See p. 325).

Conclusion. Robertson³ observes that, "the Ricardo-Marshall doctrine of rent, whatever changes may be called for in interweaving it with the theory of value, at least brings out clearly certain points which are of great importance from the standpoint of policy". [See under "Social Implications of the Theory of Rent", p. 330.] For this reason Robertson concludes that, "the classical theory of rent has by no means lost its vitality and instructiveness".

³ Robertson, *Lectures*, Vol. II, pp. 43 and 49.

Modern writers have not discarded the Ricardian concept of rent. *They have generalised it.* Rent is a differential payment which the owner of every scarce factor of production can exact from others. So the concept can be applied to all factors, and not to land alone.

There is another difference between the modern view regarding rent and the Ricardian view. Ricardo ascribed the origin of rent to "the original and the indestructible powers of the soil". According to modern views, rent is due to *inelasticity of supply, i.e.,* to the scarcity of the superior factors of production.

RENT AND THE LAW OF DIMINISHING RETURNS

Rent has been defined as *a surplus of return over cost.* Such a surplus may arise as a result of the operation of the Law of Diminishing Returns. Let us imagine that a farmer employs a successive number of labourers on a *given* plot of land with a *constant* technique of production. Suppose that, when one labourer is employed, the *marginal produce* is 10 mds.; when two are employed it is 8 mds.; and, when three are employed, it is 4 mds. The diminution of marginal product is a consequence of the operation of the law of diminishing returns. If the wage rate is equal to the value of 4 mds., the farmer will employ just three labourers. His total product will be $(10+8+4)$ mds. = 22 mds. His total wage bill will be 3×4 mds. = 12 mds. Assuming, for the sake of simplicity, that labour charges constitute the only cost of production, the farmer will get a surplus of $(22-12)$ mds. = 10 mds. This surplus, which is due to the operation of the law of diminishing returns, should be called rent.

Let SS_1 be the marginal cost curve of a particular farm. If PM is the market price, the owner will produce OM units. His total cost (including normal profits) is $OMPS$. His total receipt is $OM \times PM = OMPN$. Hence, $\text{rent} = \text{surplus of receipts over cost} = OMPN - OMPS = SPN$.

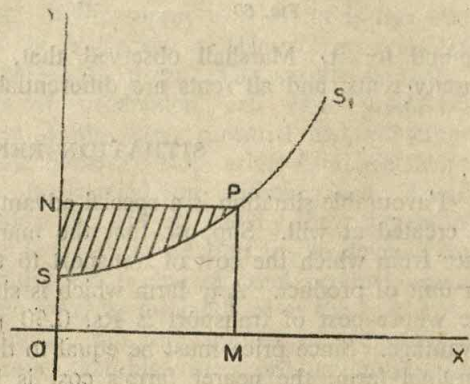


FIG. 68

DIFFERENTIAL RENT AND SCARCITY RENT

Differential rent arises when there are qualitative differences between different plots of land.

Rent also arises from scarcity of land. Suppose that in a country all lands are of equal quality but the total amount of land available is less than what is demanded. In such a country the landowners will be able to charge a price for the use of land. The price may be called Scarcity Rent.

How the scarcity rent of land is determined may be explained by a diagram as follows.

Let MRP be the marginal productivity curve of land for farming. If land is available in unlimited quantities it will be used up to the point at which the marginal product is zero. In Fig. 69 this amount is represented by OP. If only OS amount of land is available for use, the marginal product is SR. The supply curve of land is SQ. The landowners will be able to charge SR per unit for the use of land.

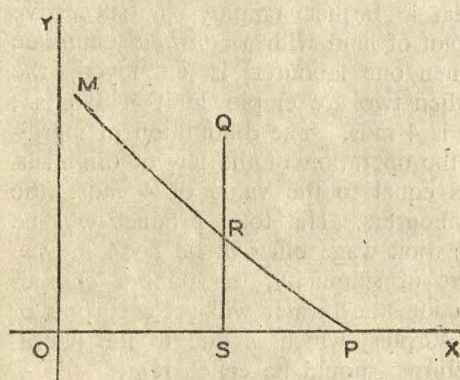


FIG. 69

The scarcity rent is SR. It is assumed that the landowners do not have to incur any cost for supplying the land.

Differential rent and scarcity rent are two aspects of the same thing, viz., producer's surplus. Differential rent arises because the *better grade lands* are scarce in supply. Scarcity rent arises because the *total available land* is scarce in relation to the

demand for it. Marshall observed that, "in a sense all rents are scarcity rents, and all rents are differential rents".

SITUATION RENT

Favourable situation is a special advantage which cannot ordinarily be created at will. Suppose that the marginal land is situated at a place from which the cost of transport to the nearest market is Re. 1 per unit of product. Any farm which is situated nearer (for example, one whose cost of transport is Rs. 0.50 per unit) has a differential advantage. Since price must be equal to the cost of production of the marginal farm, the nearer farm's cost is less than price by at least Rs. 0.50 per unit. This surplus is called the Situation Rent.

In town areas situation advantage is primarily due to location in fashionable areas where people assemble in large numbers. Shops situated in such areas can sell more and their average earnings are higher. Therefore, they can pay higher rents.

Urban site rents, however, are not due entirely to differential advantage over other sites. In urban areas there is usually a scarcity of land in relation to all the uses to which it can be put, e.g., office, factory, residential houses or parks. The site rent of any plot must at least equal the income that can be earned from the best alternative use to which it can be put.

WHY DOES RENT ARISE?

According to the Ricardian Theory, rent arises because some lands are endowed by nature with greater productivity. The difference between the cost of production on a plot of land and the cost of production on the marginal land determines the amount of rent earned by the former. The lower costs may be due to greater fertility or to situational advantages.

The Ricardian explanation of rent is too simple. It ignores the existence of scarcity rent and rent which may arise from the operation of the Law of Diminishing Returns.

Modern writers define Rent in a wide sense to mean Producer's Surplus, i.e., all incomes obtained by a factor of production in excess of the income necessary to keep it in use. Such a Producer's Surplus arises from the following causes :

(i) *Inelasticity of Supply*. If the supply of a factor of production is perfectly elastic, it will not earn any producer's surplus. *Example* : If land with high productivity is available as much as required, nobody will cultivate low grade lands ; the price of agricultural output will equal the cost of production on the high grade land and their owners will earn no surplus over cost. If the supply of a factor is *less than perfectly elastic*, some units of the factor will be able to earn a surplus over and above their minimum supply price. The surplus is rent.

(ii) *Specificity*. A factor of production can earn producer's surplus or rent only if its use is absolutely essential to production. Such a factor is called a Specific Factor.⁴ Rent arises from specificity. *Example* : Cultivation cannot be carried on without land. Land-owners must be induced to allow the use of land by the payment of a price. If the supply of land is scarce in relation to the demand for it, the entire surplus from cultivation (value of total product *minus* cost of cultivation) will be taken away by the landlord as the consideration for allowing the use of land. But the supplier of a particular variety of fertiliser cannot get more than his cost of production because many varieties of fertilisers are available for use. Thus only a specific factor can earn rent.

Will there be rent if all plots of land were equally fertile and equally favourably situated? Economic rent, in the sense of a sur-

⁴ Boulding, *Economic Analysis*, p. 509.

plus above cost of production can arise even if all plots of land are equally fertile and equally favourably situated.

(i) *Land has a variety of uses.* It can be used for growing different kinds of crops, for grazing or for building houses. Suppose that a plot of land when used for rice-cultivation yields no surplus above cost but when used for jute-cultivation yields an income of Rs. 10 above the cost of production. The owner will naturally use it for producing jute. If a rice-cultivator wants to have the use of the plot he must pay to the owner at least Rs. 10, whatever might be the situation or the fertility of the plot. This rent is based on opportunity cost. It arises on the "margin of transference" from one use to another. "The amount of money which any particular unit could earn in its best paid alternative use is sometimes called its Transfer Earnings.... In general the excess of what any unit gets over its transfer earnings is of the nature of rent".⁵

(ii) Rent may also arise from *the operation of the law of diminishing returns*. The market price of the produce from land must equal the marginal cost of production. But owing to the operation of the law of diminishing returns the earlier 'doses' of labour or capital produce higher returns than the marginal 'dose'. Therefore, the owner of the land gets a surplus above marginal cost from the earlier 'doses'. This surplus is rent. (See p. 321).

(iii) *Rent may arise from scarcity.* Even if all plots of land were equally fertile and equally favourably situated, rent will arise if the total amount of land available is less than the total amount demanded. (See p. 322).

THE MODERN THEORY OF RENT

The Ricardian Theory of Rent has the following distinctive features :

- (i) According to it, rent is the income from land.
- (ii) Rent arises because some lands are more productive than others.
- (iii) The amount of rent obtained from a plot of land is equal to the difference between the productivity of that plot and the productivity of the marginal or no-rent land.

The modern theory of rent differs from the Ricardian Theory on all the above points. The modern theory is summarised below.

1. *Surplus payment.* Modern writers use the term Rent in a wide sense to include any surplus payment that may be earned by a factor of production. Every factor of production has a supply price which may be defined as the minimum price at which a particular

⁵ Benham, *Economics*.

quantity of the factor is available. Suppose, for example, that at price P a quantity m of a factor will be supplied. Suppose now that the demand for the products of the factor is such that more than m units of the factor are required. To induce the supply of the additional units the price offered must be raised higher than P . Under competitive conditions all units of the factor will have to be paid at this higher rate. The earlier units now earn more than the minimum necessary to keep them in use. The difference is a surplus payment which is called rent. Thus, rent can be earned by all factors of production and not by land alone.

2. *Inelasticity.* Rent, in the sense of a surplus, arises because at a particular price only a limited quantity of a factor is available. If the supply of a factor is perfectly elastic it will not earn any income beyond the minimum needed to ensure its supply. Rent therefore arises only when the supply of a factor is inelastic.

3. *Specificity.* But mere inelasticity cannot create income. The factor must be one which is absolutely necessary for production and must be one which cannot be substituted by any other factor. From the standpoint of a particular firm, a factor of production for which the entrepreneur can find no substitute, whose supply is absolutely inelastic and the use of which is absolutely necessary for production may be called a "specific factor" or a "specific input". The owner of such a factor can force the firm to pay to him the whole of the surplus earnings of the firm, if any. An agricultural farm is a case in point. To a farmer land is absolutely necessary, it cannot be substituted by any other factor and the total supply of land is limited by nature. Therefore, the landlord can force the farmer to pay the whole of his surplus earnings as a condition for allowing the use of the land. Rent therefore arises from "specificity". A non-specific factor can earn no rent.

4. *Earnings minus necessary earnings.* Surplus income or rent is calculated by subtracting from actual earnings the minimum *necessary* earnings. Every factor of production can be applied to various uses. For example, land can be used for farming, grazing, or building houses. The income from any particular use of a factor must at least equal the income that might be obtained from any other alternative use. If it does not, it will be transferred to the alternative use. The minimum earnings necessary to keep a factor in a particular use is therefore, equal to what may be called its transfer earnings or opportunity earnings. Income in excess of transfer earnings is rent.

RENT AND PRICE

Price is determined by marginal utility and marginal cost of production. Rent is a surplus above cost of production. Rent therefore,

is not an element in the price-determining process. As Ricardo originally put it, "Rent does not enter into price".

Rent does not determine price but is determined by it. High rent does not *cause* high prices but is a *result* of high prices. "Corn is not high because a rent is paid but rent is paid because corn is high".

If the whole of the economic rent is taken over by the State, the supply of land will not diminish. But if wages or interest are abolished the supply of labour and capital respectively will diminish and production will fall. Therefore, wages and interest are *necessary* payments for maintaining production but rent is not. Wages are paid to compensate the disutility of work, interest is paid to compensate for waiting but land is a free gift of nature. Supply of land involves no disutility to anybody. Land has no disutility cost.

The statement that 'rent does not enter into price' requires some qualifications.

1. *Rent and the Individual Firm* : From the standpoint of the individual producer rent is a *part* of the cost of production because he has to pay it and to account for it. But he can pay it only because the demand and supply conditions are such that surplus earnings can be made. If the price of the product falls, the surplus earnings of the firm will fall. In the long run, this will reduce rent and *not* the income of the entrepreneur. Hence rent is not a factor in the price-determining process although it has to be taken into account by the individual producer when he calculates his cost of production.

2. *Rent and Opportunity Cost* : Again, when we consider the quantity of a factor available for a particular use, rent becomes a part of the cost of production. Land may be put to various uses. The 'cost' of land for a particular use depends on the income that can be earned from other uses of it, *i.e.*, on its transfer cost or opportunity cost. If the transfer cost increases, *i.e.*, if the income from an alternative use increases, the owner of land will demand more and get more from its uses. The increase of rent in such cases will affect the price of all products from land.

RENT OF BUILDINGS

The rent paid for housing accommodation consists of two parts (i) a ground rent for the land on which it is built and (ii) a payment for the house erected on it.

The ground rent depends on the situation value and the opportunity cost. But once a building is erected the possibility of transferring the land to other uses becomes almost nil. Therefore, ground rents are based mostly on the situation value.

The payment for the use of a house (apart from the ground rent) is determined on the same principles as the price of a durable commo-

dity like a machine. In the long run, the owner's return must cover the costs of construction including normal profits. In the short run, however, the supply of buildings is more or less fixed. Therefore the short period rent of a building depends primarily on demand.

RENT OF MINES, QUARRIES AND FISHERIES

Mines and quarries resemble agricultural land. The qualities of different mines and quarries vary considerably, their supply is limited by nature and the law of diminishing returns applies to them. Therefore their rent is determined on the same principles as agricultural land. But there is one important difference. Mines and quarries are exhausted after a time. The owners therefore charge an extra payment proportional to the raisings. This is known as Royalty.

Fisheries are of various types. Deep sea fisheries have no owner and no rent is payable to anybody. But individual fishermen may earn economic rent in all areas where the law of diminishing returns applies. Inland fisheries stand on a different footing. There is usually a good deal of capital investment on them. The 'rent' of such fisheries include interest for the capital.

QUASI-RENT

Economic rent arises from inelasticity of supply. Good lands are scarce by nature. The extra income earned by the owners of such land cannot disappear through the emergence of new supplies of land or any substitute for it. This is true both in the short period and in the long period.

In the case of a consumable commodity, like rice or textiles, the supply is usually elastic both in the short period and in the long period. When the demand for such a commodity increases, production also increases. Its price cannot remain permanently above cost of production. Loanable funds belong to this category because the supply of such funds is usually elastic.

Certain types of man-made durable assets, e.g., machines and houses, stand midway between land and consumable commodities. In the long period their supply is fairly elastic, but not in the short period. Once a machine is constructed for a particular purpose it cannot be easily diverted to other purposes, i.e., supply does not contract easily. Also, it takes time to produce a machine, i.e., supply does not expand easily. The result of inelasticity is that the income earned from a durable asset in the short period depends primarily on the demand for the goods produced by it. The income may be high or low and may even be zero, just like the rent of land. *The income obtained from a durable asset, whose supply is inelastic in the short run, is called Quasi-rent.* The prefix 'quasi' means 'sort of' or 'similar to'.

Marshall first pointed out the similarity between rent of land and the income from durable assets which are inelastic in the short period. He called the whole of such income the Quasi-rent.

But some writers, like Flux, use the term to mean income in excess of normal profits. (If the actual income is less than normal profits they call it negative Quasi-rent.) On this view, Quasi-rent has been defined as the short run earnings of a capital goods *minus* the average variable cost of production that is to say, the earnings minus of the short run cost of keeping it running it.

Rent, Quasi-rent and Interest. The term rent is generally related to land, quasi-rent to man-made assets and interest to loanable funds. From the economic standpoint the distinction between these three types of income is mainly a matter of *elasticity through time*.

Land and capital are usually mixed up. There is always some amount of capital investments on land. The supply of land is not absolutely inelastic. Its supply may increase from new discoveries, deforestation and reclamation from the sea; its supply may diminish from afforestation or encroachment by the sea. But these processes are slow and do not involve large areas. Therefore, we can say, that the supply of land is fairly *inelastic both in the short period and in the long period*. Man made capital assets are fairly *elastic in the long period* but relatively *inelastic in the short period*. Loanable funds and capital assets can be converted into each other. Free or floating capital is being constantly made into fixed capital, while fixed capital is being converted into floating funds through depreciation funds and other methods. The supply of floating funds can be quickly increased or decreased but it requires time to change the supply of fixed assets. The supply of fixed assets is fairly inelastic in the short period. The supply of loanable funds is fairly *elastic both in the short period and in the long period*.

Thus the distinction between rent, quasi-rent and interest is not absolute but one of degree. They are different forms of income from property. As Marshall says, "interest on free capital and quasi-rent on an old investment of capital shade into one another gradually; even the rent of land being not a thing by itself, but the leading species of a large genus".⁶

THE RENT ELEMENT IN WAGES, INTEREST AND PROFIT

Rent has been defined as the surplus income earned by superior lands. But since such surplus arises because good lands are scarce, the concept of rent has been widened to include all surpluses originating from limitation of supply, temporary or permanent. Rent, thus defined, can be found in all categories of income.

⁶ Marshall, *Principles of Economics*.

1. *Wages* : All workers are not alike in efficiency. Better workers earn higher wages and such higher wages can be called the Rent of Ability.

2. *Interest* : According to the demand and supply theory, interest is determined by marginal productivity and the marginal supply price of capital or of loanable funds. The marginal supply-price of capital or of loanable funds is determined by the disutility cost of saving to the marginal savers. But there are intra-marginal savers who incur less disutility, *i.e.*, those who would have saved at a lower rate of interest. Such savers, when they lend at the market rate of interest, earn more than they expected and the surplus income may be called rent.

3. *Profits* : Many entrepreneurs earn more than normal profits owing to superior organising ability and bargaining power of mere chance. Such high incomes may be called rent. According to Walker, profit is a short period phenomenon analogous to rent but it disappears in the long run.

ECONOMIC PROGRESS AND RENT

The economic rent of a plot of land depends on the difference between the cost of production on it and the cost of production on the marginal land. It follows therefore, that economic progress will affect rent if it affects the margin of cultivation. Let us apply this principle to different cases.

1. *Improvement of Agricultural Technique (new Machinery or Methods)* : If such improvements affect all lands equally, productivity of all lands will increase. If the demand for the product remains the same, the price will fall and lands which were on the margin of cultivation will not be cultivated. Some lands which were formerly intramarginal will now be marginal and earn no rent. Aggregate rents will fall. The rent of superior lands will have to be calculated with reference to this new margin.

If the improvement increases the productivity of lower grade lands only, the margin of cultivation will move upwards and the rent of superior lands will fall.

2. *Improvement in Transport* : Cheaper transport reduces advantages of situation like nearness to markets and therefore reduces rent partially. It also enables imports of agricultural commodities from distant countries. In such cases the margin of cultivation rises in the importing country and rents fall. In the exporting country there is increased production, the margin of cultivation is pushed forward and rents rise.

3. *Growth of Population* : Increased population means increased demand for agricultural products. Lands have to be cultivated more

intensively and lower grade lands have to be brought under cultivation. The margin of cultivation is pushed forward and rents rise.

4. *Improvement of the Standard of Living*: When the income level of the country increases due to economic development the proportion of the income spent on food does not increase at the same rate as expenditure on other types of commodities. (Engel's Law, p. 83). It follows therefore, that agricultural incomes do not rise in the same proportion as wages, interest or profit.

It is to be observed that different forces affect rents differently. Thus if improvements in transport and growth of population occur together the net effect on rent may be zero. Increase of population, however, occurs regularly in most countries. Therefore, rents usually tend to rise. Improvements in technique and transport only check the tendency and cannot overcome it in the long run.

SOCIAL IMPLICATIONS OF THE THEORY OF RENT

Rent is a surplus income earned by the intra-marginal producer. In the case of land, superior plots earn rent because the demand for the commodity produced is high enough to bring inferior lands into cultivation. If the demand rises further, more inferior lands will be cultivated and the rent of superior lands will rise still further. The income which the owners of such superior lands enjoy is *not the result of any effort or sacrifice on their part* but the effect of increased consumption. Rent is therefore called "unearned income". Henry George in his book "Progress and Poverty" showed that economic progress increases the income of land owners and confers on them an undeserved bounty. He suggested that such incomes belong to society and should be taken over by the State through taxation.

Rent, in so far as it is an unearned income, is a very good subject of taxation. Since rent is not the result of effort, the State-appropriation of rent would involve no sacrifice on anybody's part. Also since rent is a surplus above cost of production it is not a part of the supply price of the factor of production. If the state takes over the rent, the supply of the factor will not diminish and there will be no diminution of production. Society will gain because a number of idlers (living on rent) will be eliminated and inequality of incomes will be less.

Against the view that rent should be appropriated by the State, the following arguments have been advanced.

1. The actual rent obtained by landlords is not wholly a surplus. Some part of the income is due to improvements made through effort and expenditure of capital. It is very difficult to separate economic rent proper from actual rent.

2. Sometimes land values decline owing to social changes. If the State appropriates all unearned increments, it should compensate for unearned "decrements".

3. According to modern theory, actual rent is based upon the factor's transfer income or opportunity-income. Every factor of production has various alternative uses. The income earned in any particular use is equal to the income that might be earned by transferring the factor to the next best use. As a result of social changes (increase of population etc.) the transfer earnings of a factor may increase. The amount of economic rent will increase but the whole of the increase cannot be called "un-earned".

We can conclude that social changes sometimes increase the earnings of a factor of production, and sometimes the increased income is in the nature of a windfall. The rent of land usually falls within this class and is therefore a fit subject for taxation. But care must be taken to separate out the true surplus earnings or economic rent.

RECOMMENDED READINGS

1. Joan Robinson, *Economics of Imperfect Competition*, Ch. VIII.
2. Samuelson, *Economics* (9th edition), Ch. 28.
3. Ryan, *Price Theory*, Ch. 7.
4. Cairncross, *Introduction to Economics*, Ch. 22.
5. Benham, *Economics*, Ch. XXVIII.

EXERCISES

1. How does the rent of land arise? Will there be any rent if all plots of land were equally fertile and equally favourably situated?

2. Explain fully what you understand by economic rent. What gives rise to it?

3. Define rent. Explain how there can be a rent element in the remuneration of any factor. (C.U. B.Com. '68, '71, '73).

4. Do you agree with the view that there can be a rent element in different kinds of factor income? Give reasons for your answer. (C.U. B.A. '69).

5. Do you agree with the view that rent of land does not enter into the price of crops? (C.U. B.A. '62; Mysore B.Com. '67).

6. What is the difference between rent and quasi-rent? How are rent and quasi-rent related to inelasticity of supply of a factor? (C.U. B.Com. '61).

7. Distinguish between "Rent" and "Quasi-rent". Discuss the relationship between rent and economic progress. (C.U. B.A. '64).

8. Explain, giving reasons, the effect on Rent of (i) an improvement in transport, (ii) an increase in population, (iii) improvement in methods of cultivation, and (iv) economic progress in general.

9. Critically examine the idea that rent does not enter into price. (C.U. B.A. '66; C.A. Final May '73).

10. Discuss the Ricardian theory of rent. How does it differ from the modern theory of rent? (C.U. B.Com. '69).

11. What do you understand by "transfer earning"? Show how rent is connected with transfer earning. (C.U. B.A. '71).

12. Examine the concept of economic rent. Comment on the statement that the rent of land is the leading species of a large genus.
13. Show how (a) the quality of soil, (b) the margin of cultivation, and (c) the price of the produce affect the amount of rent. (Gau. B.A. '62, '64).
14. "Whether rent is or is not a price determining cost depends on the viewpoint from which we look." Explain the statement. (C.U. B.A. '62).
15. What is economic rent? How is this rent affected by a rise in prices? (Gau. B.A. '64).
16. Give the critical account of the Ricardian Theory of Rent. (C.U. B.A. '68; Gau. & Dibru. '69; See C.A. Nov. '68).
17. "Rent arise when the supply of a factor is less than perfectly elastic". Discuss. (See C.A. May '72).
18. Explain why economic rent is a surplus to the economy as a whole but a cost of production from the point of view of individual firms and industries. (C.U. B.A. '72).
19. What is rent in the Ricardian system and how does it arises? Why does not Ricardian rent enter into price? (C.U. B.A. '74).

CHAPTER 23

ECONOMIC SYSTEMS

DEFINITION

The term Economic System is used to denote the legal and institutional framework within which economic activity takes place.

Economic activity includes all actions by human beings relating to the production, consumption, exchange and distribution of goods and services. Human beings live in organised societies. In each society there are laws and customary rules regarding the holding of property, employment of labour, methods of exchange etc. There are also social institutions (like the joint family and the caste system of India) which influence economic life. The laws, customary rules and social institutions determine how and what goods and services will be produced in that society and how they shall be distributed among the people. The laws, customs and social institutions constitute the framework within which economic activity takes place.

There are two main economic system : Capitalism and Socialism. In recent times a third one has emerged from an attempt to integrate the good features of these two systems. This is known as the Mixed Economy. The three economic systems are described below.

THE BASIC ECONOMIC PROBLEM

Society's Production Possibility Frontier. The basic economic fact is that in any society, the total of resources capable of producing different commodities is limited. It is therefore necessary to make a choice between relative scarce commodities. The problem can be illustrated by means of Production Possibility Curve or the Transformation Curve. The Production Possibility Curve represents alternative production possibilities open to an economy. With given resources and technology the economy has to choose between different goods. The resources could be employed for production of various alternatives goods and it has to be decided which goods would be produced more and which is to be produced less.

In deciding what amounts of goods are to be produced, the society is really deciding the allocation of resources among different possible goods. In order to simplify the analysis it is assumed that there are only two goods—Cloth and Food. The example of two commodities is used to illustrate the problem of choosing; the same analysis apply to any choice of goods. It is assumed that there is a

given amount of productive resources and that those resources are fully employed. It is further assumed that there is no change in technology.

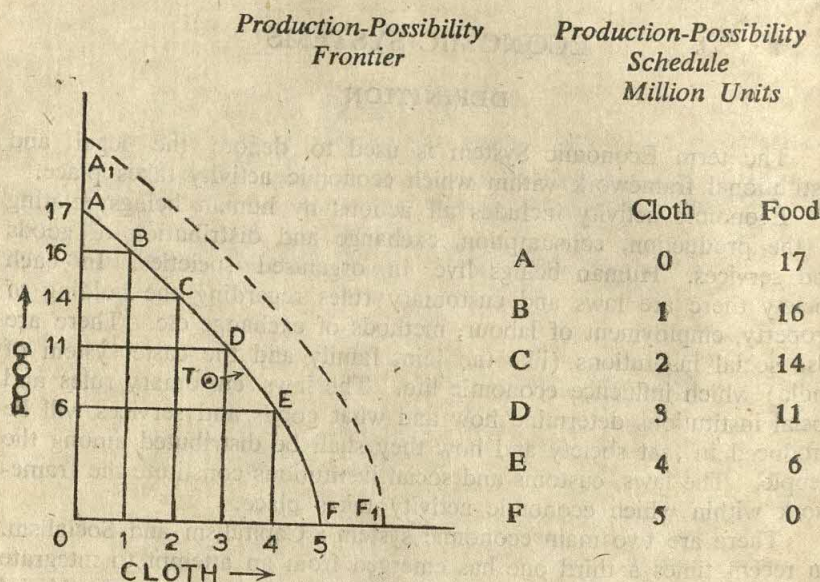


FIG. 70

If all the resources of the economy are devoted to the production of cloth, 5 million units of cloth will be produced and nothing for food. At the other extreme if all the resources are devoted to the production of food 17 million units are made and nothing is produced for cloth. These are two extreme possibilities in between then. There are many other production possibilities such as B, C, D, and E. With production possibility B the economy can produce 16 million units of food and 1 million units of cloth. With production possibility C the economy can produce 14 million of food and 2 million of cloth. In other words we give up some units of food in order to have some units of cloth. As we move from position A to B, we sacrifice 1 million units of cloth for the sake of 1 million units of food. Again if we move from B to C we sacrifice 2 million units of food for the sake of one million units more of cloth. The schedule indicates that our sacrifice of cloth goes on increasing as we move further from C to F. Thus at full employment the economy must be producing one good by giving up something of another. With given resources and technology, the production choices open to a nation between two goods can be summed up in production-possibility frontier. This indicates the way in which one good can be transformed into another by transferring resources from its production to that of the other.

The alternative production possibilities can be shown graphically by plotting the data of the above table. The curve AF in Figure 70 is obtained when the data of the table are plotted. The AF curve is called the production-possibility curve which indicates various combinations of two goods which the economy can produce with a given state of technology and a given total of resources. As we move from A to F along the AF curve, we sacrifice some good Y for having more good X.

The production possibility curve is also called Transformation Curve because moving from one point to another on the curve, one good is transformed into another, not in the physical sense but by diverting resources from one use to the other.

With given resources being fully utilized, the combination of two goods produced can lie anywhere on the production possibility frontier AF and not inside or outside it. Any point inside the curve, such as T indicates that resources are not being fully employed in the best possible way. If resources are idle, by putting them to work, we can have more cloth and more food. We can move from T to D and thereby get more of both the commodities.

The production-possibility concept can explain many of the most basic concepts in economics. It illustrates the basic definition of economics, namely the problem of choosing among scarce resources in order to achieve best goods.

There are three basic problems of economic life. What, How and For Whom. The first problem is what commodities shall be produced and in what quantities. The second problem is how shall goods be produced? That is, what should be the technique of production. Finally, for whom shall goods be produced? The first two problems can be discerned from the p-p diagram alone. What goods are produced and consumed can be shown by the point which we choose on the p-p frontier. How goods are to be produced involves an efficient choice of methods and proper assignment of different amounts and kinds of limited resources to various industries.

The production possibility curve is drawn with the assumption of a given state of technology and a given total of resources. Now if productive resources expand as a result of economic growth, the productive capacity of the society will increase and the production possibility curve will shift outward to the right indicating that more of both the goods can be produced and consumed than before, as is shown in $A_1 F_1$ in Fig. 70.

CAPITALISM

Definition and Characteristics. Modern writers use the term Capitalism to mean the economic system that emerged as a result of

the Industrial Revolution which occurred in England during 1760-1820 and gradually spread all over the world. The features of capitalism are discussed below.

1. *Private Property* : Private property is essential (according to capitalist philosophy) because it supplies the motive underlying economic activity. The desire to own wealth, riches and a high income induces man to work hard, thereby benefiting not only himself but also the community. The selfish motive of acquiring property makes every individual produce as much as possible. Thereby the total output of the community is maximised. Also, private control over property is necessary in order to enable the individual to organise production in the best possible way.

2. *Consumer Sovereignty* : Consumer sovereignty means freedom of choice on the part of every consumer. According to capitalist philosophy every individual knows what is best for him. The State should interfere as little as possible with his freedom of choice. The consumer's choice is reflected in prices. Profits depend on prices and production follows profits. In order that production may conform to consumer's choice the price system must be free.

3. *Freedom of Enterprise* : Freedom of enterprise means absence of restrictions on choice of occupation, movement of capital, and of labour. Under Capitalism, the Government does not interfere with the economic decisions of the individual. Such a policy of non-interference is called *Laissez Faire*. Under pure capitalism, there is supposed to be perfect competition between producers, each of whom tries to maximise his profits. The decisions, how, when, and what to produce depend solely on the individual producers. The penalty of any wrong decision is failure. The inefficient producer loses money and is automatically eliminated. In the end only the most efficient producers remain. The consumers get the most goods at the lowest prices. Freedom of enterprise is an essential element of capitalism. For this reason a Capitalist economy is sometimes described as a Free Enterprise Economy.

4. *Other features*. Under advanced capitalism we find a well-developed *market organisation*. In it the price system operates. The producers work with the *incentive of profit*. *Economic stratification* is found, between the bourgeois and the proletariat. Even in advanced capitalism, the state undertakes certain public utilities. Therefore there exist a *public* and also a *private sector*.

Comments. Capitalism in the 'pure' form fulfilling all the conditions described above, does not exist in any modern community. In every country there are restrictions (on private property, consumer's choice, and free enterprise) imposed in the public interest. When the restrictions are light and the general tendency is to maintain *producers' and consumers' freedom*, capitalism is said to prevail. "Capitalism

is a system in which, on average, much the greater portion of economic life and particularly of net new investment is carried on by private (*i.e.*, non-Government) units under conditions of active and substantially free competition, and avowedly at the least, under the incentive of a hope for profit".¹

The Merits of Capitalism and a Free Enterprise Economy. The following arguments may be advanced in support of Capitalism as an economic system :

1. Freedom of enterprise leads to *keen competition* among producers. Only the *fittest of them survive*. Thus society gets the services of the most efficient producers. Cost of production and prices automatically come down to their lowest levels.

2. Competition makes every individual try to do his best. The effort *improves the quality* of every individual. The tremendous progress of arts and science during the 19th and the 20th century is attributable to freedom of enterprise.

3. Under capitalism goods are produced according to the consumer's choice. *Consumer-freedom leads to maximum satisfaction*.

4. Capitalism *operates automatically* through the price-profit mechanism. It avoids the danger (which exists under socialism) of supervision and regulation by a bureaucratic authority suffering from incompetency, bias or nepotism.

5. *The abolition of capitalism will not create equality*, for there will exist inequality of power. "Democracy does not avoid the necessity of rulers. It only alters the way in which they are chosen and controlled".²

6. Capitalism has *great achievements* to its credit. During the 19th Century, when capitalism prevailed in Europe and America there was a tremendous increase of productivity and output. Between 1890 and 1919 the physical volume of production increased by three times. As compared with pre-capitalistic times there has been an enormous improvement in the quality of production and the standard of living. Capitalism has provided increasing opportunities for civilised life, at least as regards the material requisites of living.

The Evils of Capitalism. The following arguments can be advanced against Capitalism :

1. Free competition inevitably leads to the formation of *monopolies*. Capitalism cannot retain the advantages of competition.

2. Under Capitalism there arises great *inequalities* in incomes and wealth. This leads to inequality of opportunity and a division of society between the rich and the poor. The rich exploit the poor.

¹D. M. Wright in Ellis, *A Survey of Contemporary Economics*.

²D. M. Wright, *ibid*.

3. *Consumer sovereignty is a myth.* Under capitalism consumers are misled by advertisements and false propaganda. They are also squeezed by monopolies.

4. The profit motive leads to the *production of noxious articles* or articles in "illth" as Hobson puts it. Under capitalism there is production for profit, not production for use.

5. Competition is *wasteful*. There is duplication of services and unnecessary expenditure over advertisements.

6. Capitalism leads to *unemployment, trade cycles* and the *factory system* where workers are oppressed.

7. The doctrine of *maximum satisfaction is a myth*. Most of the benefits of capitalism are enjoyed by the rich. The poor have a very small share. "There is a world of difference in terms of happiness between the high priest and the slaves in the temple of industry".³

8. According to Karl Marx, Capitalism is a particular mode of organisation of production which is characterised by *wage-slavery, production for profit, and creation of surplus value*.

Conclusion. Capitalism, as it exists in most countries now, does not conform to the theory of capitalism. In all capitalist countries we find monopolies, great inequalities of income, and oppression of the poor by the rich. These evils have led to a revolt against capitalism. In U.S.S.R. and China capitalism has been over-thrown. In U.S.A. and U.K. attempts are being made to modify capitalism and adopt a Mixed Economy where private property and free enterprise are allowed subject to state control and planning.

PRIVATE PROPERTY

Private Property is said to exist when private individuals are allowed by law to own land, buildings and other articles of wealth.

Private property implies three main rights—

(i) *The right of exclusive user*: The owner of a piece of property is alone entitled to occupy and enjoy it. He may allow others to do so but it is subject to his pleasure.

(ii) *The right of succession*: When the owner dies the property passes to his heirs or to persons nominated by him before his death.

(iii) *The right of disposal*: The owner has the right to transfer his property by sale, mortgage or lease to any one he chooses.

The state very often imposes limitations and restrictions on the three rights mentioned above. Thus the rights of private property are not absolute and unlimited.

There is evidence to show that in ancient times land and various other items of wealth were owned by the community as a whole and were used by all members of the community according to need. The

³ G. D. H. Cole, *Economic Planning*.

legal recognition of private ownership of property originated comparatively late. John Stuart Mill pointed out that the laws of property are not natural laws like (say) the laws of production. The laws of property are made by man and are alterable by man.

Arguments in favour of Private Property. The principal arguments in favour of the institution of private property may be summarised as follows :

1. *The Labour Argument* : The labourer or producer should have exclusive right to what he himself has produced. John Stuart Mill was of opinion that this is a natural right. But since production usually requires the co-operation of many factors it is hardly fair to give the product wholly to the one factor labour. The labour argument is really based on expediency. If men are not sure of being able to enjoy the fruits of their own labour they will not be willing to work ; production will be reduced and society will suffer. Therefore, it is expedient to give to the labourer the right of ownership over his own product.

2. *The Capital Argument* : The argument also is based on expediency. Capital grows by accumulation. If the saver is not sure of being able to enjoy his savings he will not save and will not work hard to create the necessary surplus. Therefore, a man should be given exclusive property rights over what he saves.

3. *The Contract Argument* : Sanctity of contracts (fulfilment of obligations willingly undertaken and freedom to undertake such obligations) is essential to carry on the complex system of production of modern times. Fulfilment of a contract necessarily involves transfer of money and/or goods from one person to another. If exclusive ownership of money and goods (*i.e.*, the right of private property) is not allowed, there can be no transfer of money and goods from one person to another. Under such circumstances nobody will be able to enter into contracts.

4. *The Production Argument* : Without the right of private property entrepreneurs will be unable to initiate new technical combinations because to do so it is necessary to have the power of disposal over capital goods.

5. *The Antiquity Argument* : Society has accepted the system of private property for a fairly long time (at least in countries like U.K. or U.S.A.). Sudden abolition of the system would give a violent shock to the productive organisation and would lead to chaos

Arguments against Private Property. The principal arguments against the institution of private property may be summarised as follows :

1. *It creates inequality* : Private property through inheritance has led to gigantic wealth and incomes for a few while the masses

live in poverty and squalor. Inequality of wealth creates inequality of opportunity and is a negation of democracy. A mere redistribution of existing wealth will not cure inequality because, if private property is allowed to continue, inequality will re-appear. The only remedy is permanent expropriation and transfer of all property to the state. This is the Socialist view.

2. *It leads to exploitation*: Labourers and other producers are forced to pay for the services of land and other factors of production to their owners. In most cases the owners are mere passive recipients of income, getting money without doing any work. Owners of scarce factors of production frequently exact exorbitant payments of a monopolistic character. It is sometimes said that unless such payments are allowed capital will not grow. This argument hardly applies to persons who have obtained property by inheritance. Further, as regards land the supply is more or less fixed and given by nature and so the income obtained by the landlord is wholly 'unearned'.

3. *A rent-element exists in most forms of private property*: Properties increase in value owing to the increasing necessities of the community. It is not fair that such increases should go to private pockets.

Conclusion. So long as the economic system is guided by private enterprise, private property is necessary for providing the incentives to labour and saving. In a socialist economy private property is not necessary because, in theory, production is guided by the state in the interest of the people. Even in the capitalist economy, however, there is no reason why the right of property should not be controlled and limited in the public interest. Too much accumulation of wealth in particular hands and too great inequalities, create dangers to the political and economic system. Therefore the state, even if it allows private property for the sake of incentives to production, should eliminate too great a maldistribution of it.

THE DOCTRINE OF LAISSEZ FAIRE

Laissez Faire means "let alone". During the 19th century most of the leading philosophers and economists believed that the Government should confine its activities to the maintenance of internal order and the prevention of aggression from outside. In all other matters, including economic matters, the Government should be neutral. All such matters are to be left to the initiative and enterprise of private individuals. This is known as the Doctrine of Laissez Faire. The Doctrine is an integral part of the Individualist School of political philosophy and of Capitalism. The Classical School of Economists believed in it. Adam Smith, John Stuart Mill and Herbert Spencer were the leading exponents of the Doctrine.

The Laissez Faire theory had great influence on public policy during the 19th century particularly in U.K. But after World War I the popularity of the doctrine began to decline and after World War II it has practically ceased to exercise any influence. After 1950 we find socialism in one-fourth of the world (U.S.S.R. and China) and in the remaining three-fourths, some sort of controlled economy or mixed economy.

THE PRICE-PROFIT MECHANISM

Under capitalism the quest for profits determines production. Profits depend upon prices. Prices depend upon consumers' choice. Profits can only be made if the produced goods are sold. Again, the higher the price of an article, the greater is the effort and resources applied to its production. Thus under capitalism, the volume and type of production as also the allocation of resources among different industries depend upon prices and profits. This is known as the Price-Profit Mechanism. The pricing process involves no supervision (except such as is necessary to prevent cheating or theft). It operates more or less automatically. Therefore it is said capitalism provides an automatic method for the allocation of resources among the producers and distribution of commodities and services among consumers. (See p. 226).

COMPETITION

Competition is the characteristic feature of a Free Enterprise Economy. Competition is said to exist when prices, wages, profits etc. are fixed not by status or custom but by the *free play of economic forces*. Competition is the economic equivalent of the struggle for existence which we find in nature. Competition is neither wholly good nor wholly bad. It has both advantages and disadvantages.

Advantages of competition :

1. *It makes the competitors efficient.* Every producer under competition tries to make his goods and services more attractive so that his goods and services are preferred by the buyer. The effort increases efficiency.

2. *It promotes progress.* Improvement of individual efficiency naturally leads to progress of the society as a whole. As Seligman puts it, "If competition in biology leads only indirectly to progress, competition in economics is the very secret of progress." Competition leads to research, inventions and discoveries.

3. *It leads to the elimination of the inefficient.* Both in biology and in economics competition leads to the survival of the fittest. Incompetent producers fail to sell goods and are naturally eliminated. The same thing happens to dishonest producers in the long run.

4. *Competition provides maximum benefit to the buyers.* To secure consumer preference the producers constantly try to reduce prices or to improve the quality of the goods.

Disadvantages of competition :

1. Competition forces producers to incur certain *unnecessary costs*, e.g., advertisement. This leads to waste of resources.
2. Competition sometimes leads to great *distress on the part of the weak*. This happens particularly when wages are forced to low levels by an oversupply of labour.
3. Owing to inequalities in income and wealth, it is impossible to have fair competition.

THE SOVEREIGNTY OF THE CONSUMER

The Power of Consumer. It is said that under Capitalism, "the Consumer is the King". The arguments on which this proposition is based are as follows. The immediate purpose of all productive activity in a capitalist society is to sell goods to the consumer. The money income of the producer comes from the price paid by the consumer. Hence, producers try to bring such goods to the market as would give satisfaction to the consumer. It is the consumer's choice, as shown by his expenditure, which determines what will be produced. Therefore he is the 'king'. In actual life, the so-called consumer's sovereignty is limited by the following factors :

1. Technical considerations prevent the production of some commodities highly desired by consumers (e.g., for want of raw materials or machinery).
2. The state controls consumption of some goods through rationing or priorities or control over production.
3. In many industries monopolies and monopolistic combinations curtail the liberty of the consumer.
4. The sellers can influence consumer's choice through advertisements and clever salesmanship.
5. Production is governed by effective demand. Therefore the rich (who are in a minority) have a greater influence in deciding what is to be produced than the poor who constitute the majority of the consumers.
6. Consumers are also producers. Their income depends on the volume of investment and employment in the community. Variations in the amount of investment and employment cause changes in the income of the consumer and affect his scale of preferences.

Comments. The theory of consumer's sovereignty may be true in a buyer's market where there is relative abundance of goods. It is not true in a seller's market where scarcity is the rule.

Professor Meade⁴ says that consumer's choice is generally imperfect. In many cases the consumers are ignorant of the available goods. Even though the goods are available, consumer's choice is disturbed by sellers propaganda. Barbara Wootton⁵ says that most consumers lack the knowledge necessary to make a good choice. From these opinions it can be said that consumer sovereignty does not exist. Prof. Mises, however, maintained that in spite of lack of knowledge the consumer must have the freedom of choice. It is the consumer expenditure which determines the allocation of resources. They guide production.

SOCIALISM

Definition and Characteristics. Socialism, as an economic system, has been interpreted in different ways by different groups of writers. Each interpretation has given rise to a "school" or political party. The following are the main features of Socialism.

1. *Socialism is opposed to the system of private property.* Some schools of socialism would abolish it altogether, some would allow it in a limited field, e.g., in the means of consumption. But all are agreed, that the means of production (capital equipment and business organisation) must be brought under public management.

2. *Under Socialism free enterprise is substituted by state planning.* The people as a whole decide how, when, and what to produce. Planning is necessary in order to secure, "production for use rather than profit".

3. *Under Socialism, the national income is equitably distributed among the citizens.* The object is to secure economic equality. Removal of poverty or "Garibi Hatao" is an objective in a Socialist Economy and also in a Mixed Economy.

4. *Socialism is to be achieved by peaceful and democratic methods*—"Evolution not revolution", and "Revolution by the ballot rather than the bullet".

The Schools of Socialism. Socialist parties differ from one another mainly on the following points: (i) the extent of private property to be allowed; (ii) who shall manage the public enterprises; (iii) how the products of industry are to be distributed and (iv) how the transition from capitalism to socialism is to be brought about.

On the basis of their views on the above points many "parties" and "systems" have emerged viz., Fabian Socialism, State-socialism or Collectivism, Guild Socialism, Syndicalism, British Socialism or the Labour Parties, Marxian Socialism, the Soviet Economy, Yugoslav Decentralization, Maoist China, and many others.

⁴ *Economic Analysis and Policy.*

⁵ *Lament for Economics.*

Communism. Communists recommended the complete abolition of private property and free enterprise, and the establishment of a classless society through revolution. In such a society production and consumption will be regulated by the people as a whole. "From each according to his ability, to each according to his need."

There are many sub-schools within communism. In Soviet Russia it is believed that before the desirable social order is brought about there must be an intervening period of dictatorship, the "dictatorship of the proletariat". The party will decide who shall be the dictator.

Communism may be regarded as the extreme form of socialism. The main points of difference between the two are the following :

(i) Socialism permits private ownership of consumption goods like articles of clothing, dwelling houses etc. Communism prefers state ownership of both consumption goods and production goods.

(ii) Socialism favours the democratic form of government. The political authorities in a socialist state are chosen by free elections on the basis of one person, one vote. Communism prefers dictatorship. U.S.S.R. and China, the two leading communist countries in the world now, are ruled by dictators.

(iii) Socialists believe in following peaceful methods for the attainment of their objectives. Communists believe that, "the end justifies the means", and have no objection to adopting violent means for the overthrow of capitalism.

The Arguments against Socialism. The following arguments have been advanced against socialism.

1. *Loss of efficiency and productivity* : Socialism involves management of industries by public officials. But public officials are not as efficient as private entrepreneurs. The jobs of public officials are safe and their promotions depend on a time scale. Permanent government officials suffer from lack of initiative, inability to take quick decisions, nepotism, and corruption. Therefore, government management will be inefficient.

Productivity in a socialist state would be reduced not only because state management is inefficient but also because there will be *insufficient labour incentives*. The worker's income will not depend on his productivity but on the principle of distribution adopted by the State. If every worker gets the same income, there is no reason why anybody should work hard. But if wage-differentials are permitted, *i.e.*, if different wages are paid to different workers, the basic principle of socialism (economic equality) is violated.

In U.S.S.R. the problem of securing labour efficiency has been attempted to be solved in two ways : (i) by providing certain non-monetary incentives to work, *e.g.*, medals and certificates and (ii) by

punishing workers who fail to perform the established standards (or 'norms') of work.

It is said that the standard of living in the capitalist democracies like U.K. or U.S.A. is higher than what it is in communist dictatorship of U.S.S.R. If this is correct, it shows that productive efficiency is lower under socialism than under capitalism.

Productive efficiency depends very greatly on the rate of *capital accumulation*. Under capitalism capital accumulation takes place automatically under the incentive of private profit. But under socialism the state will have to plan capital formation on an arbitrary basis. There is a possibility that the state will fix a *too high rate of capital formation*. In U.S.S.R. for example, 20 to 25% of the national income is devoted to the production of capital goods according to plan, whereas in the capitalist democracies the normal rate of capital accumulation is 5 to 10%. If a large percentage of the national income is devoted to the production of capital goods, the production of consumption goods must be less than what it should be and the consumers must suffer. The policy of a high rate of capital accumulation may be supported on the ground that it is necessary for quick economic development and that it would secure a high level of national income in the future. But it involves considerable sacrifices on the part of the present generation of citizens.

2. *Complexities of administration*: The burden of administration in a socialist state is too great because every question has to be decided by some authority. Under capitalism the quantity and quality of output, the rate of capital accumulation and various other economic problems are decided automatically through the price-profit mechanism. Under socialism they have to be determined by the people running the state. Some writers say that it would be necessary to have "Demigods and Archangels" in charge of a socialist state to make it work.

3. *Loss of consumer sovereignty*: There is no scope for consumer sovereignty under socialism. The state (which means in effect public officials) decides which commodity is to be produced and in what quantities. The consumers must take what is given to them. Taussig observes, "competition leaves the purchaser some freedom. . . . and a choice as to what you would have and when and how you would have it, (which) satisfies a deep-rooted human desire. But the consumer in a socialist state would have to accept whatever the all-controlling public managers put before him." Under the democratic forms of socialism the state is supposed to represent the consumer, and his choice, but the popular forms of socialism (e.g., communism) are not democratic but dictatorial.

4. *Loss of incentives*: Abolition of private property and free enterprise will reduce the incentive to work. Total production will

fall. Also there will be no desire for inventions and discoveries because inventors and discoverers will not be able to enjoy the fruits of their work. As Pigou¹ puts it, "A government could print a good edition of Shakespeare's works, but it could not get them written".

5. *Wrong Allocation of Resources*: Under socialism the allocation of resources between different uses would be arbitrary. Under capitalism the price-profit mechanism secures automatic allocation. (See p. 226 and 341). Its absence would cause maladjustment. Some goods will be produced in excess and wasted while other goods will be scarce.

This argument was advanced by Gossen in 1854. It was later developed by Pierson, Mises, Hayek and others. Mises² observes as follows: "As soon as one gives up the conception of a freely established monetary price for goods of a higher order, rational production becomes completely impossible. Every step that takes us away from private ownership of the means of production also takes us away from rational economics. . . . Where there is no free market there is no pricing mechanism; without a pricing mechanism, there is no economic calculation . . . exchange relation between production goods can only be established on the basis of private ownership of the means of production". The views of Mises were subsequently refuted by Lange, Taylor³ and others who showed that there can be a pricing process under socialism by which consumer preferences can be judged. The resources can be allocated rationally according to consumer preferences by a process of successive trial and error. Pigou showed that it is possible, in theory, to allocate resources, under socialism, on the basis of "accounting costs" but he is of opinion that, in practice, it will require a body of supermen to do it.

6. *Loss of Personal Liberty*: Under socialism there will be no choice of occupation. Labour, just like any other economic resource, will be under planned management and the labourers will have to work at and in such places as the authorities will decide. The remuneration of labour will not depend on productivity but on the total product and the method of distribution adopted. There will of course be no unemployment but this is hardly an advantage because the terms of employment (hours, wages, etc.) will be fixed by the central authorities. *There is no unemployment in a jail.* Security of employment is no compensation for loss of liberty. According to Hayek, Socialism, with economic planning, is the "Road to Serfdom".

7. *The Illogicality of Marxian Arguments*: The basic arguments of Marxian Socialism, the labour theory of value and the

¹ Pigou, *Capitalism and Socialism*, p. 30.

² See Hayek, *Collectivist Economic Planning*.

³ Lange and Taylor, *On the Economic Theory of Socialism*.

materialistic interpretation of history cannot be supported by logic. (See p. 236).

8. *The Cultural Indeterminateness of Socialism*: Socialism involves state control over many aspects of human life and will therefore lead to stagnation of culture. "Liberal socialism suffers from a fatal ideological instability in that it promises a rise in the standards of living incompatible with cultural stagnation which its institutional framework would entail".⁴

The Arguments for Socialism. The following arguments can be advanced in favour of socialism.

1. *Socialism eliminates the evils of capitalism.* In every capitalist country we find great *inequalities* of income and wealth. Society is divided into two classes, the rich and the poor. The majority of the rich live in idleness and luxury. The poor people live in over-crowded and insanitary dwellings. They have to work hard to earn a bare living. They cannot enjoy any luxury and do not get sufficient opportunities to improve their position in life. In a capitalist country *monopolies* exist in large numbers and exploit both workers and consumers. *Cyclical fluctuations* occur, causing hardship to the poor during depressions and an artificial prosperity during booms. A capitalist country is never free from *unemployment*. Even in periods of cyclical prosperity a large number of workers remain unemployed. Under capitalism production is always based on the *profit motive*. So a large amount of injurious articles are produced. Also, unduly large quantities of resources are devoted to the production of luxuries because they are consumed by the rich who can pay more. All these evils will be eliminated under socialism because under it there will be *economic equality, guaranteed employment* for everyone and state management of production which will eliminate monopolies, cyclical fluctuations and the manufacture of injurious articles.

2. *Public management is not necessarily inefficient.* Public utility services like railways and electricity works are managed efficiently by public officials. There is no reason why they will not be able to manage other undertakings. In a socialist economy a higher standard of morality will develop because the selfish and money-hunting motives of conduct, associated with capitalism, will be eliminated.

3. *The so-called consumer sovereignty is a myth.* Under capitalism the consumer is exploited by monopolies and misled by propaganda. Under socialism only those goods are produced which are useful; so the consumer is ultimately benefited.

4. *The incentive to work will not suffer under socialism.* By education, propaganda and merit awards, the psychology of the people can be altered.

⁴ D. M. Wright, *ibid.*

5. *Scientific allocation of resources is possible under socialism*, as Lange and Taylor have shown. Socialistic allocation would be better because it would be based on use and not on profit.

6. *Socialism provides economic liberty* for the individual by guaranteeing to him the right to work and a minimum standard of living. Choice of occupation is not really free under capitalism because of poverty and the low bargaining power of labour.

Conclusion. Schumpeter⁵ is of opinion that the socialist pattern of society is superior to the capitalist pattern because of the following four features of socialism :

- (i) Greater economic efficiency—increased productivity can be secured under state management.
- (ii) Greater welfare due to less inequality.
- (iii) Absence of monopolistic practices.
- (iv) Absence of business fluctuations.

The controversy between the supporters of socialism and capitalism is continuing. The cold war between U.S.A. and U.S.S.R. is basically an ideological conflict between capitalism and communism which is a form of socialism. Both systems have certain merits and certain demerits. Capitalism secures better production, socialism secures better distribution. Capitalism is better suited for individual liberty and individual development, while socialism is better for collective peace and happiness. It seems that the best economic system would be a combination of the two, if such combination is at all practicable.

ECONOMIC PROBLEMS OF A SOCIALISTIC STATE

1. *Allocation of resources.* The most important economic problem of a socialistic state is how to secure the optimum allocation of resources. The productive resources of the country (like steel or coal) have to be distributed among their various uses (industries etc.). Under capitalism this is done automatically through the price-profit mechanism. In a socialist state there is no price-profit mechanism in operation. Therefore resources in such a state must be allocated by the administrative orders of the authorities. The problem is, what should be the principle according to which decisions on such matters are arrived at. There has been a lot of discussion on this subject. Some writers (e.g., Mises and Hayek) are of opinion that a rational allocation is impossible without a price-profit mechanism. Others (e.g., Lange and Taylor) are of opinion that it is possible through a method of trial and error.

2. *Objectives and order of priorities.* Before resources are allocated, a socialist state must decide what *ends it must pursue*⁶. The ends

⁵ Schumpeter, *Capitalism, Socialism and Democracy*.

⁶ Bergson, article in Ellis, *Survey of Contemporary Economics*.

vary according to circumstances. The state may want to maximise welfare by producing goods according to consumer preferences. In this case the socialist state may follow the well known rules of welfare economics for maximising welfare (e.g., equalisation of marginal productivities of factors in different uses, equalisation of prices with marginal costs etc.). But it is not always possible to be guided by consumer preferences. If the socialist state is an underdeveloped country (as U.S.S.R. was in 1917) it must devote relatively more resources to capital formation. Present consumption must in such a case be sacrificed to the needs of development. Again, a socialist state may find itself surrounded by enemies threatening its independence (as U.S.S.R. was in 1917). In such cases the state must devote proportionately more resources to armaments. ("More guns, less butter.") The different ends, like the ones mentioned above, cannot all be pursued simultaneously. The socialist state must therefore lay down an *order of priorities* determined according to the ends selected and allocate resources according to those priorities. Ultimately therefore, allocation of resources in a socialist state is a matter of discretion and decision by the planning authorities.

3. *Sufficient incentives.* There are several other economic problems in a socialistic state. In such a state there are generally insufficient incentives to work. Restrictions on the accumulation of property, absence of opportunities of luxury spending and uniformity of wage rates make people less desirous of hard work which is the basis of efficiency. Some socialist states have attempted to solve the problem by allowing wage differentials to a certain extent, awarding prizes and extra amenities to good workmen, prison sentences to idlers and other methods.

4. *Administrative efficiency.* A socialist state has an administrative organisation which is both large and complex. Therefore an important problem in such a state is how to secure administrative efficiency.

5. *Distribution.* Lastly the socialist state has to solve the problem of distribution of consumption goods. Who will get how much of the national output is solved in a capitalist state through the price mechanism. In a socialist state the authorities decide the matter and must find out the best method of distribution. This problem is of course related to the problem of securing incentives and allocating resources. In the existing socialist states we do not find *absolute equality* in the matter of distribution of consumption goods. Nor do we find distribution according to the Marxian formula "need". The principle actually adopted is *approximate equality* with more advantages and amenities to the more efficient workers and politically important persons.

MIXED ECONOMY

Definition. Mixed Economy is a term used to describe a policy of compromise between Capitalism and Socialism. The idea underlying the policy of Mixed Economy is that Capitalism has certain advantages. It increases total production, improves the efficiency of the workers and makes for progress in science and technology. For these advantages Capitalism should be retained but its evils must be eliminated by adopting certain measures of a socialistic character.

Characteristics. The measures to be adopted are the following.

1. Nationalisation of key and basic industries and public utilities, existence of private and public sector.
2. Reduction of inequality of incomes by progressive taxation, death duties and other taxes.
3. Restrictions on property owners so that they cannot use their properties for unsocial purposes.
4. Provision of social security, *i.e.*, insurance against unemployment, old age, accident etc.
5. Economic development through planned efforts by the state.

The trend of public policy in countries like U.K. and U.S.A. is towards a mixed economy. In Japan, Germany, Italy, France, Scandinavia and Western Europe this policy has been followed and they have achieved a high degree of prosperity. These countries had, "miracles of sustained growth in production and living standards". —Samuelson.⁷ The same writer believes that, "The single most surprising development of our age has been the unpredicted vigor of the modern mixed economy". (See p. 352).

A mixed economy can also be called a "managed economy". It can be managed with the managed macroeconomic of policy together with the principles of microeconomics.

Criticism. But both orthodox capitalists and orthodox socialists dislike Mixed Economy intensely. According to the socialists mixed economy is a contradiction in terms and is only a trick to bring workers into the capitalist fold by giving them some temporary advantages. According to the upholders of capitalism, a mixed economy does not possess any of the advantages of capitalism. According to Schumpeter a mixed economy is, "capitalism in the oxygen tent."

WELFARE STATE

A state, where a comprehensive system of Social Insurance has been adopted, is called a Welfare State. The object of social insurance is to provide economic security to the citizens. Social insurance eliminates risks arising from accident, unemployment, poverty in the

⁷ Samuelson, *Economics*.

old age etc., and thereby increases the welfare of the people. (See p. 291). A State, with provision for social insurance is therefore called a Welfare State.⁸

RECOMMENDED READINGS

1. Pigou, *Capitalism vs. Socialism*.
2. Dickinson, *Economics of Socialism*.
3. Schumpeter, *Capitalism, Socialism and Democracy*.
4. Oxenfeldt, *Economic Systems in Action*.
5. Samuelson, *Economics* (9th edition), Ch. 43.

EXERCISES

1. The present organisation of industry is often described as Capitalistic. Give an explanation of the meaning of the term, pointing out the distinguishing features of Capitalism.
2. What are merits and demerits of Capitalism? (Cp. C.A. May '68 and Nov. '69).
3. What are merits and demerits of Socialism? (Cp. C.A. May '68).
4. Describe the chief economic advantages of a socialistic economic system and discuss the economic problems faced by it. (C.U. B.A. '62).
5. Bring out the distinction between capitalism, socialism and communism. (Gau. '65).
6. How far is the Consumer the King under Capitalism?
7. Account for the loss of faith in the operation of the capitalistic system. (See C.A. Nov. '69).
8. Discuss the economic consequences of the institution of private property.
9. Write notes on: Mixed Economy and Communism. (C.U. B.Com. '74).

⁸ Benham, *Economics*, p. 35.

CHAPTER 24

ECONOMIC POLICY

THE AIMS OF ECONOMIC POLICY

Under a system of *laissez faire capitalism*, the state is not concerned with economic matters. Therefore it need not have any economic policy. In modern times *laissez faire capitalism* does not exist in any country of the world. Where capitalism exists, its operation is modified by various forms of government interference. In some countries government interference is small (e.g., U.S.A.). In others it is fairly large (e.g., Great Britain).

The policy of a Mixed Economy. Nowadays it is thought that the economic policy of the Government in all countries should have certain aims and objectives. The generally accepted aims of economic policy are enumerated below.

1. *Economic Development* : In all underdeveloped countries, the government must try to develop the country through planning. Even in developed countries the government has to do many things to assist industries and commerce.

2. *Full Employment*: Unemployment exists in all capitalistic countries, developed and underdeveloped. Unemployment involves loss of income, reduced economic growth, lowered standards of living and other evils. It is possible for the government to increase employment by a judicious fiscal policy. Full employment is therefore an important aim of economic policy.

3. *Higher standards of living* : It is the duty of the government to improve the living standards of its citizens. Many things can be done for this purpose. Ensuring fair wages to labour, so that their income is increased, is essential. Improvement of the working conditions of labour is also necessary. In all advanced countries there exists labour legislation dealing with matters important to labour. Regulation of working conditions is a part of such legislation. Protection of the consumer, by legislation or otherwise, is also necessary for improving living standards.

4. *Reduction of inequalities.*: In all capitalistic countries there are great inequalities in income and wealth. Inequality produces great evils. It is the duty of the government to remove inequality by judicious fiscal and taxation policy. The policy includes the programme of *Garibi Hatao*.

5. *Social Security* : The working classes should be given security against the risk of sickness, accident, unemployment etc. Social insurance measures have been adopted in all advanced countries of the world.

6. *Stability of prices and rates of foreign exchange* : Monetary instability produces great evils. Inflation and deflation are both harmful. Fluctuations in the rate of foreign exchange affect international trade and introduce an element of uncertainty into the economic life of the country. It is the duty of the government to secure stability of the value of money through a proper monetary policy.

7. *Maintenance of fair competition* : Consumers are most benefited under pure competition. Competitive conditions are essential for welfare maximisation. It is therefore the duty of the government to remove the obstacles to competition. This involves a vigorous anti-monopoly policy.

8. *Avoidance of cyclical fluctuations* : Business cycles bring instability into the economy and produce many evil consequences. It is possible for the government to mitigate cyclical fluctuations by an appropriate fiscal policy.

STATE PARTICIPATION IN ECONOMIC AFFAIRS

The question of state interference in economic affairs or state participation in industry can only arise in a Mixed Economy. Under socialism the question is irrelevant because in a socialist order production and distribution are completely in the hands of the state.

Under pure capitalism economic affairs are to be left to private enterprise and the state has no part to play except acting as umpire in disputes, maintaining law and order and preventing aggression from outside. This is the view of writers like Herbert Spencer, John Stuart Mill and others known as the Individualists.

In modern times, however, it is recognised that a policy of non-interference (*laissez faire*) leads to grave abuses like extreme inequality of incomes, oppression over labour etc. The state must interfere to prevent these abuses, otherwise the social order will be in danger of collapse. The question arises what should be the limits of such interference?

According to some writers the only limit of state interference is public benefit. According to Benham¹ every state should interfere in economic affairs to secure (i) Full Employment (ii) Better Standards of Living (iii) Less Economic Inequality and (iv) Social Security.

For a state, desiring to secure the maximum possible public benefit the following rules regarding participation in economic affairs (or, the functions performed in modern States) may be laid down.

¹ *Economics*.

I. *State participation in Production :*

1. The state should directly own and manage all public utility services like railways, post and telegraphs etc. Competition is wasteful in such industries and they can be managed efficiently by public servants because they do not require much initiative or enterprise.

2. The state should undertake public works like educational institutions, hospitals, roads, bridges, docks, multipurpose projects, afforestation and anti-erosion measures. Such public works are not only necessary by themselves but are also part of the policy necessary to secure full employment.

3. The state should undertake services which are beneficial but which do not attract private enterprise either because they are too risky or because they are not sufficiently remunerative, *e.g.*, agricultural insurance.

4. The state should take up services which are too important to be left to private hands, *e.g.*, manufacture of armaments, atomic energy etc.

5. The state should control and regulate private industries which tend to oppress labour and the consumers, *e.g.*, monopolies.

II. *State interference in Consumption :*

The state should (i) prevent the consumption of noxious articles like wines and drugs, and (ii) protect the consumers against fraudulent practices.

III. *State interference in Exchange and Distribution :*

1. The state should provide the means of exchange, currency and coinage, and control the credit system through the Central Bank.

2. The state should arrange for the equitable distribution of scarce resources through rationing and other measures whenever necessary.

3. The state should protect through legislation and try to secure a decent level of wages for all workers.

4. The state should try to maintain reasonably low rates of interest in order that investment may be facilitated and full employment secured. (See, "Cheap Money", Ch. 28).

NATIONALISATION

Nationalisation means ownership and management of an enterprise by the state. The socialists advocate nationalisation of all instruments of production, exchange, and distribution. Supporters of *laissez faire* capitalism are opposed to nationalisation. People who believe in the Mixed Economy follow a middle path and recommend it only in particular cases.

Arguments in Favour. The principal arguments which can be advanced in favour of nationalisation are as follows :

1. Nationalisation eliminates competition and *reduces certain expenses*, e.g., advertisement costs. All the economies of horizontal combination can usually be obtained.

2. Nationalisation *democratises the power to control basic industries* and through them the country's economy. Under capitalism, this power is held (without corresponding responsibility) in the hands of a few rich persons. Control over the basic industries is also essential for economic planning.

3. An industry under private ownership tends to concentrate on the profit-making varieties. Under state ownership the question of profit is of little importance and therefore *production can be concentrated upon 'utility' articles*, i.e., varieties which are useful to the majority of consumers. Thus nationalisation improves the standard of living.

4. Under nationalisation *profits go to the state* instead of to the capitalist-owners.

5. Labourers generally get *better wages and conditions of service* from the state. Nationalisation develops a greater equality of opportunity through worker participation in management and promotion from the ranks. The internal democratisation of industries increases efficiency and eliminates nepotism or favouritism.

6. Monopoly enterprises coming within the class of *public utility services*, e.g., railways, post and telegraphs etc., should be managed by the state in the public interest.

Arguments Against. The principal arguments against nationalisation are as follows :

1. Public management is usually *less efficient* than private management. "The economy of the master's eye" is absent and therefore costs tend to be higher.

2. Government officials usually *lack initiative and enterprise*. In private concerns retention of jobs and increments depend on ability while in the government service jobs are safe and promotions follow a time schedule. The emphasis therefore is on "safety" rather than on "enterprise".

3. *Promptness cannot be secured* in government offices because work has to proceed through files and through an established procedure for dealing with them. According to B.W. Lewis,² "The elaborate over-centralised organisation that inevitably characterises nationalised industries will result in excessive cost, delay in decisions and action, discouragement of personal initiative and responsibility, obsession with grandiose schemes and internal friction". Nationalisation is therefore, undesirable in undertakings where quick decisions are necessary on complicated questions.

²Robson. *Problems of Nationalised Industry*, Ch. 2.

4. In a state-managed industry the usual failings of a government office, viz., *red-tapism, jobbery, corruption and influence of political 'bosses'*, may appear. Political consideration will determine appointments, promotions and decision. Government offices tend to expand by appointing unnecessary personnel. It is called as Parkinson's Law³ or the Rising Pyramid.

5. There is a tendency on the part of the Government to *pamper labour unions* of the nationalised industries on account of their voting power. Organised labour sometimes insists on unduly high wages or low hours of work. Production suffers and costs are raised. This happened in the coal and steel industries of Great Britain after they were nationalised by the post-war Labour Government.

6. *Individual consumers are helpless in the presence of gigantic public monopolies.* "General elections are no substitute for the competitive market as an agency of control."

Conclusion. In view of the disadvantages stated above, it is generally agreed that nationalisation, within the framework of capitalism, should be adopted only in the following cases, (i) where the enterprise does not require much initiative, e.g., post and telegraphs; (ii) where private ownership and competition is particularly wasteful, e.g., railways; (iii) in essential services where private enterprise will not be attracted, e.g., agricultural insurance; and (iv) for developing basic and key industries where they are inadequate.

Concerning nationalisation, Robson⁴ observes as follows: "While nationalisation opens up a wide vista of new opportunity, and enables us to overcome many of the drawbacks of profit-making enterprise, it does not by itself resolve the problem of producing and distributing basic goods and services in an efficient and economic manner so as to serve the public interest in the highest possible degree. It takes us into a new world of hope and promise, but that world has its own problems, which although different from those presented by private enterprise, are both pressing and difficult."

ORGANISATION OF A NATIONALISED ENTERPRISE

A state owned enterprise may be organised in many ways.

1. *Government Department*: It may be run as a government department like the post office in India. The chief advantage of this method is that the legislature of the country can exercise direct control not only over general policy but also over the details of management. The chief disadvantage is that the organisation of a government depart-

³ C. N. Parkinson, *Parkinson's Law or Other Studies in Administration*.

⁴ Robson, *ibid.*

ment is not suitable for business purpose and therefore such enterprises cannot be run as business concerns. In particular, the money and the accounts of such enterprises are mixed up with the government revenues and the government accounts.

2. *Statutory Corporation* : It may be managed through a "statutory corporation". A statutory corporation means a corporation created by a special law. This is the favourite method of management in U.S.A. and U.K. (Examples—The Reconstruction Finance Corporation, The Commodity Credit Corporation, The Tennessee Valley Authority etc.). In all these cases a statutory body is created by law and specific functions are allotted to it. The initial capital is either given by the Government or lent by it. Sometimes it is raised by sale of shares which are subsequently taken over by the Government. After formation the corporation manages itself, keeping separate accounts, the government only laying down general principles. A statutory corporation is free from interference by party bosses and can be run as a business concern. But it suffers from several disadvantages. Its accounts are not subject to government audit and therefore its operations are hidden from the legislature which cannot exercise effective control over policy. The U.S. corporations are gigantic concerns which have created subsidiary corporations through which they interfere in economic affairs without much hindrance. In India, the Reserve Bank and the Damodar Valley Corporation are statutory corporations but they are under the full control of the Government. The Industrial Finance Corporation of India is an example of a partially owned statutory corporation.

According to Robson, "the public corporation is the most important constitutional innovation which has been evolved in Great Britain during the last 50 years. It is destined to play as important a part in the field of nationalised industry in the 20th century as the privately owned corporation played in the realm of capitalist organisation in the 19th Century."

3. *Joint Stock Company* : A Government enterprise may be registered as a joint stock company under the Companies Act with the Government as the sole or majority share holder. A company possesses all the merits and demerits of a statutory corporation but no special law is required to bring it into existence.

4. *Miscellaneous Methods* : There are certain miscellaneous methods of organisation, e.g., (i) co-operatives of consumers and producers (ii) management by municipalities or local authorities (iii) government ownership with a lease to private persons for management (iv) joint ownership and management by government and private individuals. These are adopted in certain cases.

PRICE POLICY IN A NATIONALISED INDUSTRY

Under a system of free private enterprise the problem of price-fixation does not present any difficulty. The entrepreneur fixes his prices and output on the basis of market conditions in such a way as to obtain the maximum possible profit.

A nationalised industry, however, is conducted for national service or national welfare and not for profit. Therefore, the rule of profit-maximisation cannot be the determinant of output and price policy under nationalisation.

In U.K., France and other countries many industries were run under public control even before World War I. The output and price policy followed, varied enormously. In some cases, the prices prevailing immediately before nationalisation were adopted and continued with minor alterations. In some cases prices were fixed on non-economic grounds, e.g., to give special facilities to particular sections of the people or to reduce the consumption of particular articles. No general principle, based on economic considerations, was adopted formally or informally.

Rule : No Profit No Loss. Towards the end of the nineteenth century, the question of price policy was extensively debated in Great Britain in connection with municipal undertakings like gas, water works and electric power stations. The Conservatives argued that these undertakings should be worked at a profit and the profit should be utilised to give relief to the local taxpayers. The Fabian socialists, particularly Sydney and Beatrice Webb, argued that profit making was improper and that the price charged in such undertakings should be equal to the cost of production so that there is *neither profit nor loss*.

The view of the Labour Party of Great Britain on the question was at first undecided but gradually it came round to accept the Fabian principle. During 1945-50 when the Labour Party was in power and extensive nationalisations took place, the principle was officially adopted. In the majority of the nationalisation statutes it was provided that the public corporations in charge of particular industries should fix prices in such a way as to produce neither loss nor profit. The policy continues in present day Great Britain with minor modifications in certain special cases.

Economic theorists—both socialist and non-socialist—generally agree that prices in nationalised industries should be *equal to the costs of production*. The principle was laid down long ago by Barone and Pareto and is accepted by the moderns like Taylor, Oscar Lange, Meade and Lerner. The grounds on which these economists support the principle can be summed up as follows :

1. If prices in nationalised industries are fixed above or below costs, there will occur an improper allocation of the resources of the

community. A low price involves large sales and over-expansion of the enterprise, a high price involves low sales and under-expansion. The correct volume of output, or the 'ideal output' from the welfare standpoint, is one at which the price is equal to the cost of production.

(Little—in *A Critique of Welfare Economics* and Lerner—in *Economics of Control*.)

2. A price greater than the cost of production is an arbitrary reduction of the income of persons who buy the product (because under competitive conditions the price would have been equal to the cost of production). Conversely a price lower than cost is an arbitrary subsidy given to the buyers of the product concerned. Both policies may amount to unfair discrimination.

(Taylor—in *Economics of Socialism* by Oscar Lange and others).

3. If the price is less than cost there will arise a deficit which will have to be met by the state. Deficit financing has an inflationary effect. In the converse case, if profit is earned by the state, there is a deflationary effect.

4. Equality between prices and costs gives the consumer a real opportunity to assert his choice. The consumers' preferences are not distorted by too high or too low prices fixed by the authorities.

Conclusion—

It is, however, generally admitted, that there are certain exceptional circumstances where, in the interest of general welfare, prices may be made deliberately to differ from costs. Profit-making (by fixing prices higher than costs) is considered to be justified as an anti-inflationary measure or, as a method of reducing the consumption of noxious articles like opium or, as a method of indirect taxation (as in U.S.S.R.). Loss-taking (by fixing prices below cost) is considered to be justified where larger sales of the commodity in question would lead to greater social welfare (as in the case of educational establishments) or, would lead to a rapid expansion of the national income in other direction (as in the case of irrigation works, aviation, and wireless communication).

(Henderson and Little—*op. cit.*)

ECONOMIC PLANNING

During the 19th century it was thought that private property and free enterprise lead to the "greatest good of the greatest number". Pure Capitalism frowns upon planning because planning prevents the full operation of the forces of competition which, according to the classical theory, produce maximum satisfaction. As Seymour Harris puts it, "Planning has no place under pure capitalism, for, it does not allow much room to the capitalist trinity—sovereignty of the consumer, the tyranny of the price system and the quest for profits". But pure

capitalism is not in operation anywhere now. The tendency everywhere is to modify capitalism and adopt the compromise form of economic system, known as Mixed Economy.

Definition. An Economic Plan is a scheme of state-intervention or state-participation in economic affairs. Some definitions of economic planning are given below :

“Economic planning is the making of major economic decisions—what and how much is to be produced, and to whom it is to be allocated—by the conscious decision of a determinate authority, on the basis of a comprehensive survey of the economic system as a whole”.—H. D. Dickinson, *Economics of Socialism*, p. 14.

Economic Planning means, “the direction of productive activity by a central authority”—Hayek. *Collectivistic Economic Planning*.

The Objectives of Planning. Different countries have adopted planning with different objectives. A brief description is given below of the possible objectives of planning and objectives which have been or are being followed.

1. Planning may be adopted with the object of developing the economic resources needed for *defence purposes* or for increasing *military power*. The planning system followed in Nazi Germany, Fascist Italy and in Japan during 1936-42, are examples of this type of planning. Economic planning in Soviet Russia is motivated partly by this objective and partly by motives of economic development.

2. Planning may be adopted to *eliminate the evils of unrestricted capitalism*. In many countries, where the capitalistic pattern of society has been retained, planning has been introduced to reduce the evils of capitalism. The objectives of such planning are to secure social and economic security, full employment, fair wages, fair prices, etc.

3. Planning may be adopted for the *development of undeveloped countries*. In such countries economic development cannot be left to private enterprise because competent men and necessary equipment are both lacking. Well organised central planning is needed at least during the initial period of development. “Planning is deeply connected with the phenomenon of backwardness. Backward areas, backward peoples, backward classes, are the main object of planning.”

4. Economic planning may also be adopted as a temporary expedient for *recovery and reconstruction* after a calamity like war.

It will be apparent from the list given above that planning may have both economic and non-economic objectives. The plan adopted in any country may have more than one objective and different objectives may be pursued with varying degrees of intensity.

Arguments Against Planning. The principal arguments used against planning can be summarised as follows :

1. Planning *interferes with the free play of economic forces*. This is hardly an argument against planning. The free play of economic forces produces certain evils to remedy which planning may be adopted.

2. Planning involves bureaucratic interference with trade and industry and will *reduce production*. This result will come about if the plan is bad or if the implementation of the plan is left to inefficient hands. The experience of Russia's Five Year Plans shows that planning can increase production enormously.

3. According to Hayek,⁵ conscious planning is *not compatible with personal freedom*. To a certain extent this is true. Planned production reduces the freedom of entrepreneurs. Sometimes planning involves control over manpower. Choice of occupation is not free. Also consumers have a less variety of goods to choose from because the planning authorities decide when and what to produce.

4. The efficacy of a plan depends on the calibre of the planning authorities. Some writers argue that a plan on a nationwide scale must take into account so many conflicting factors, both present and future, that *good planning will require a number of supermen to direct it*. "The problems are too complex for the human intellect—too complex even for a hundred Einsteins duly divided up among the appropriate sub-committees".⁶ It may be argued that supermen of the order required being rare, economic planning should not be attempted.

5. Some writers argue that large scale economic planning by the government *will produce a "muddle"* because the larger the scope of an organisation the greater are the problems it has to face. Government servants are not superior as "planners" to private citizens. Government plans may succumb to unexpected difficulties just like those of ordinary persons.

6. Total planning *concentrates all power and all major decisions in a few hands*. This has two consequences. (a) A single mistake may have catastrophic effects. (b) Planning authorities, being human, tend to persist in their policies even though a mistake is apparent. In a free economy mistakes (as to production or trade) are not disastrous because the loss falls on a few private individuals. Decentralisation of decisions leads to dispersal of risks. Centralised planning throws the burden of the risk on the whole community.

7. Planning may be adopted with non-economic objectives, like development of military power or racial exploitation. Therefore *planning involves the introduction of non-economic criteria*, specially social

⁵ Hayek, *The Road to Serfdom* (1945).

⁶ Harrod.

and political criteria, into decisions on economic questions like production and distribution of wealth.

8. In a planned economy *there is delay* because there is a lack of "automatism"—everything has to be "decided" by the central authorities.

9. The *administrative cost* of the planning machinery is too high.

10. Some modern writers like Robertson and Harrod are not opposed to government interference as such. They support the use of budgetary policy and broad financial and monetary controls to counteract trade cycles and secure economic improvement. But they object to *a single centre directing the details of production and distribution*. As Robertson puts it, "The State should try to seek its ends by trying to influence the economic weather, not by trying to ration dewdrops."

Arguments in Favour of Planning. The principal arguments advanced in favour of planning can be summarised as follows :

1. Planning is simply the *rationalisation of economic life*. As Robbins⁷ says, "Strictly speaking all economic life involves planning To plan is to act with a purpose, to choose, and choice is the essence of economic activity." Animals are guided by instinct and chance predominates in their life. But among human beings, reason guides actions. Planning is the application of this principle to society as a whole.

2. The free play of economic forces under capitalism produces various disorders like unemployment, trade cycles and extreme inequalities of income. *State planning is one of the methods of eliminating these evils*. According to Harold Laski, "Planning, after all, is no more than the reduction of a chaos to a cosmos : it is simply the exercise of that foresight which adapts the means to an agreed end".

3. *Judicious planning can increase production enormously* as the experience of Russia shows.

4. Planning is the only method of *developing undeveloped and underdeveloped countries*. In such countries sufficient equipment and efficient entrepreneurs are lacking. Only by planned action can these deficiencies be made up.

Conclusion. Capitalist opposition to economic planning can be ignored because it is based on self-interest. The capitalists are against planning because it will reduce profits and possibilities of exploitation. Economists who oppose planning do so because they are doubtful about the ability of governments to carry out a plan and also fearful of the effects of planning on individual initiative and liberty. But planning is undoubtedly beneficial in undeveloped countries where individual initiative is at a low level.

⁷ Robbins, *Economic Planning and the International Order*.

Lewis⁸ observes that, "There are no longer any believers in *laissez faire* except on the lunatic fringe"; and that, "The central issue in the discussion of planning is not whether there shall be planning but what form it shall take."

The Essentials of Planning. Planning to be successful must fulfil certain essential conditions which may be enumerated as follows:

1. *Assessment.* It must be based upon an accurate assessment of available resources. For this purpose there must be an economic survey.

2. *Targets.* The programme of planning must be carefully drawn up with definite targets.

3. *Time schedule.* A definite time schedule for the completion of the different parts of the plan must be fixed.

4. *Resource limits.* The targets must be within the resource limits of the community, actual or potential.

5. *Objectives.* The objectives must be carefully chosen. They must not be mutually inconsistent.

6. *Overall planning.* Planning must cover the entire economic field. Piece-meal planning is not good. Where the plan is split up into parts, the different parts must be coherently related, otherwise they may conflict with one another.

7. *Undivided authority.* There must be a single undivided authority for overall planning. Unified control is essential for purposeful planning.

RATIONALISATION

Definition. Rationalisation may be defined as the reorganisation of an industry with a view to securing the maximum possible efficiency.

In a competitive economy the individual firm always aims at maximum profits and minimum costs. With these ends in view it introduces technological improvements, makes organisational changes which reduce costs and increase consumer attraction for the goods it produces. Cost may be reduced by eliminating waste, introducing up-to-date machinery, increasing labour productivity, and by various other methods. Sales can be increased by improving quality, reducing price, giving greater consumer service, or by securing a larger export market. Structural alterations for the purpose of securing the aforesaid objectives, take place continuously under the spur of competition. Rationalisation is a wider aspect of this continuous process. When structural alterations take place as a result of the adoption of a common policy for the industry as a whole, it is called Rationalisation.

The movement for rationalisation started after the World War I in Great Britain and certain other countries. At that time it was found

⁸ W. A. Lewis, *Principles of Economic Planning*.

that most of the plants and equipments had become old and obsolete and that industries were faced with considerable difficulty in adjusting the industrial structure to the new conditions. Finance was the main obstacle in most cases.

After World War II the problem of adjustment arose in a magnified form. During the war period there was considerable scientific progress. Many new products and processes had been discovered. The machinery and plant in use in most of the firms was not only worn out but also out of date. Drastic and fundamental reconstruction was necessary in order to keep abreast of the times. In all countries the movement for rationalisation gained momentum.

The Methods of Rationalisation. Since the object of rationalisation is to secure greater efficiency, any scheme of rationalisation must include all or most of the following objectives :

1. *Technological improvement* : New and up-to-date machinery must be substituted for old and obsolete ones. The latest scientific processes must be adopted. The use of automation may be considered to be part of rationalisation. (See, Ch. 34)

2. *Financial reorganisation* : Firms suffering from over-capitalisation or under-capitalisation must remedy these defects by taking suitable legal and other measures.

3. *Standardisation of products and processes* : Standardisation, which means uniformity of production types, helps sales and simplifies the production technique.

4. *Scientific management* : One method of improving labour productivity is to adopt the methods of work distribution and personnel management devised by F. W. Taylor⁹ and called Scientific Management. The main elements of scientific management are the following :

- (a) Fixation of the work-programme of every worker in such a way that there is no wastage of time and labour in unnecessary movements.
- (b) The selection of the best worker for each particular task and then training, teaching and developing the workman.
- (c) Co-operation between the management and the men.
- (d) Division of the work into as nearly as possible equal shares between the management and the workers.

Scientific management increases labour productivity and promotes better labour-capital relations.

5. *Integration* : The efficiency of an industry can be considerably increased by integration, horizontal or vertical. By horizontal integration, inefficient firms can be eliminated and the production can be concentrated in the best firms. By vertical integration, raw material costs and management expenses can be reduced.

⁹ F. W. Taylor, *Scientific Management*.

6. *Sales promotion* : Rationalisation can lead to the use of better methods of advertisement and salesmanship. Joint action by all the firms in an industry is usually very effective in the export markets. It is also less expensive.

The Case for Rationalisation: Rationalisation has been advocated because of the following advantages which it can secure :

(i) Consumers get better service because there is an improvement of the quality of the goods, standardisation, and reduction of price.

(ii) The cost of production is reduced by the avoidance of waste and the increase of labour productivity.

(iii) Low costs and larger sales produce greater profits.

(iv) Increased profits enable the firms to spend more on research and experiment.

(v) Labour-capital relations improve because higher wages and better facilities can be offered to the workers.

(vi) By a proper and judicious scheme of rationalisation a depressed industry can be put back on its feet. Rationalisation was adopted for many of the industries of Japan as an anti-depression measure and was successful in reviving Japanese industry.

(vii) Rationalisation increases the stability of the industrial structure.

(viii) Rationalisation increases the competitive powers of an industry. This is particularly advantageous for foreign trade.

(ix) Rationalisation increases the national income and output.

The Dangers of Rationalisation. There are certain dangers associated with rationalisation :

(i) Rationalisation may lead to the *development of monopoly*. There is some amount of integration associated with rationalisation. In some cases cartels and trusts are formed resulting in monopoly control over production and prices. When this happens the gains of rationalisation go into the pockets of the proprietors and not to the consumers. There may even be a reduction of quality and higher prices.

(ii) Rationalisation may produce *unfavourable reactions on initiative and enterprise*, because rationalisation generally leads to integration and expansion of the scale of production. In a large integrated industry the small firms, if any, have little prospects of improving their position by energy and enterprise. There is also comparatively less executive posts to be filled and therefore young men have less incentive for improvement.

(iii) Rationalisation may *discourage further technical improvements*. After an industry is stabilised by rationalisation, there is a general disinclination to adopt further improvements in technology because it would involve upsetting the existing arrangements by

scrapping of machinery or the abandonment of processes. Rationalisation ought to be a continuous process but it is rarely so because innovations are generally expensive. There is thus a danger that after a particular scheme of rationalisation has been adopted, the industry will become static.

(iv) The greatest danger of rationalisation is *prospective unemployment*. The introduction of up-to-date machines generally involves the replacement of some men by machines. The tendency is accentuated by the fact that usually the cost of production is reduced by such replacement. Some economists argue that such unemployment is temporary and will disappear in the long run. But even the short-run unemployment may produce considerable distress. Therefore, trade unions as a rule oppose schemes of rationalisation. We find a conflict between economic progress and the individual interests of a particular group. The conflict should be resolved in such a way that there is no unnecessary suffering and at the same time there is no retardation of progress. Various methods may be devised for this purpose. For example, the workers who lose their jobs as a result of rationalisation may be absorbed in other employments created by a judicious investment programme undertaken by the government. Relief can also be given through unemployment insurance.

The Role of the State in Rationalisation. The state has an important part to play in the rationalisation of industry. A good scheme of rationalisation must include all the firms in an industry. Therefore there must be planning for the industry as a whole. Such planning cannot generally be done by private initiative.

The state can assist rationalisation in the following ways :

(i) By drawing up suitable reorganisation plans for the industry concerned.

(ii) By providing financial assistance for the replacement of machinery and the construction of new buildings where necessary.

(iii) By legislative measures which will force recalcitrant firms to join the rationalisation plan.

(iv) By compelling the introduction of standardisation and grading.

(v) By protecting the interests of workers and ensuring that there is no distress caused by unemployment.

(vi) By protecting consumers against monopolistic exploitation.

Conclusion. Rationalisation is an instrument of economic progress. But there are dangers associated with it. Therefore rationalisation should be adopted as a part of centralised planning, and not left to private initiative. State planned and state controlled rationalisation can secure industrial development and progress and also guard against the dangerous consequences of rationalisation.

RECOMMENDED READINGS

1. W. A. Lewis, *Principles of Economic Planning*.
2. Robson, *Problems of Nationalised Industry*.
3. *Readings in the Social Control of Industry*. (American Economic Association.)
4. Cairncross, *Introduction to Economics*, Ch. 33 to 35.
5. Benham, *Economics*, Ch. II.

EXERCISES

1. In what circumstances if any would you advocate state interference with production and distribution?
2. What is rationalisation? Distinguish between Rationalisation and Scientific Management. (Mysore B.Com. '68).
3. "The case in favour of nationalisation of industry is strong, but not overwhelming." Discuss this statement. (C.U. B.A. '60).
4. Analyse the objectives of economic planning and show what way and to what extent they are compatible with one another. (Mysore '67).
5. State the economic functions performed by modern States. (Compare C.A. May '68).
6. Describe the factors leading to the growth of State-owned enterprises in our country. (See C.A. May '70).

PART II

Money—Banking—International Trade—Foreign
Exchange—Theory of Employment—Business
Cycles—Public Finance—Economic
Growth and Development

PART II

1. Banking—International Trade—Foreign
Trade—Theory of Exchange—Finance
Cycle—Public Finance—Economics
Growth and Development

CHAPTER 25

MONEY

EVOLUTION OF MONEY FROM BARTER

Barter. Barter means the direct exchange of commodities for commodities. Historians think that human beings passed through a stage when money was not in use and goods were exchanged directly for one another. The barter system was very inconvenient, for the following reasons :

(i) It required a "double coincidence of wants". A man with a goat wanting shoes must find a man with shoes wanting goats before any exchange was possible.

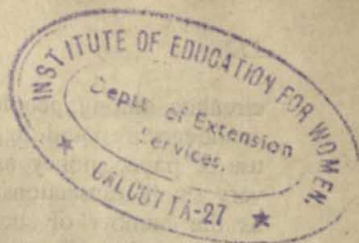
(ii) Under barter small exchanges were very difficult because the items exchanged could not always be subdivided. It was impossible to sell part of a goat or part of a shoe.

(iii) There was no convenient method of keeping savings in store.

The inconveniences of barter led to the gradual use of a medium of exchange. Some standard commodity was adopted as the intermediary through which exchanges could be effected. A man wishing to obtain shoes for a goat first exchanged the goat for a certain quantity of X (the standard commodity adopted as medium). The required quantity of X was then exchanged for shoes. Any commodity might be chosen as X. It was not necessary that X should have any intrinsic value. In actual fact we find that primitive tribes used, as the medium of exchange, some commodity which was generally recognised as useful and desirable by all persons in the community concerned. Different communities chose different commodities as the medium of exchange. Cowries, glass, oil, rice, tobacco, rocksalt, etc. were used as media by different tribes in the past.

Coinage. In course of time the precious metals, gold and silver, came into general use as the money material. At first, pieces of gold and silver were used, but as this involved weighing and assaying the pieces for each separate transaction, it became the practice to take small quantities of the metals and put a stamp or mark on it to indicate quantity and quality. This process, which is called *coinage* was finally taken over by the State as one of its essential functions.

Paper Money. In modern times it has been discovered that paper can serve all the functions of gold and silver provided small bits of it, marked with appropriate signs and emblems, can be made to



circulate among people either by sanction of law or custom or the confidence reposed in the agency issuing the paper. Nowadays the use of paper money as the medium of exchange is universal. For very small transactions, however, paper money is not suitable because as the number of such transactions is large, paper money becomes quickly spoilt. For small transactions, and to denote small units of value, it is customary to use coins made of copper, bronze, or nickel.

DEFINITION OF MONEY

The fundamental difference between money and other commodities is that money is *generally acceptable* in payment for goods, services and debts while other commodities are not. People want other commodities for their own sake—to consume, enjoy or otherwise utilise them, but money is wanted, not for its own sake (usually it has no intrinsic value) but because it has *purchasing power over other goods*. “The real significance of money is that it is a claim which can be used by its owner to buy anything.”—A. C. L. Day.¹

Because general acceptability is the fundamental characteristic of money we can define money as *anything which is generally accepted by the people* in exchange of commodities and services or in repayment of debts. “Money is an artificial, social convention.”—Samuelson.²

The definition of money given above is a very wide and general definition. Within it can be included (i) legal tender money, both coins and notes, issued by the government or a duly authorised central bank and (ii) deposits in banks. A bank deposit is, legally speaking, a debt. But it is a debt which is easily transferable (by cheque or otherwise) to any person. It is used for making payments, just like coins and notes, and is therefore classed as money by modern economists.

Prof. Walker³ said that, “Money is as Money does”. This means that the term ‘money’ should be used to include anything which performs the functions of money, viz., medium of exchange, store of value etc.

Some writers prefer to use the term money in a narrow sense to mean *only legal tender money*. Others include deposits, but only such deposits as are withdrawable by cheques, thus excluding non-chequeable deposits.

CLASSIFICATION OF MONEY

The definitions of certain terms, used to describe particular kinds of money, are given below.

¹ Outline of Monetary Economics, p. 4.

² Economics.

³ Principles of Economics.

Legal Tender Money. Legal Tender Money means money the tender or payment of which constitutes by law the sufficient discharge of a debt. Some types of money are legal tender for any amount. They are called *unlimited legal tender*, e.g., the Rupee in India and the Pound note in U.K. Some types of money are legal tender up to a fixed amount. They are known as *limited legal tender*. In India the half-rupee is legal tender up to Rs. 10 and small coins are legal tender up to Re. 1; in U.K., Shillings are legal tender up to £2 and bronze coins up to 1 sh. Legal tender money is also known as *Current Money* and *Standard Money*. Small coins, with limited legal tender quality, are also called *Subsidiary Money*.

Bank Money. Bank Money consists of bank-notes and deposits in a bank (both current and fixed) including overdraft facilities. In normal times, all these items, particularly chequeable deposits can be freely used for making payments. They are therefore commonly classed as money. Strictly speaking Bank Money is an acknowledgment of a debt, while money proper or Current Money is money issued by the State and is legal tender.

Bank money is the most important form of money in modern times. It possesses certain special advantages. It is a very convenient form of money for large payments. It eliminates risks and is durable.

Money Substitutes. Cheques, Bills of Exchange, Postal Orders, Treasury Bill and Bearer Bonds are used for making payments among known parties but are not generally acceptable. They cannot therefore be regarded properly as "money" but only as "money substitutes". "They are tickets used for arranging the transfer of money".⁴ Money-substitutes may also be called *Optional Money*.

Money of Account. Money of Account is the unit in which accounts are kept and by which values are recorded. The money of account is usually the same as the legal tender money. The Rupee in India and the Dollar in U.S.A. are both legal tender money and the money of account. The money of account may, however, differ from the money in circulation. In India formerly 'annas' and 'pies' were used in books of account although such coins were not in use in the markets.

Token Money. Token Money means money whose market value or face value is greater than the value of its contents. People accept such money at a higher value because of its convenience and because of its legal tender quality. The small coins of India, e.g., 50 P, 20 P etc. are token coins.

Commodity Money. Commodity Money means money made of some metal. When the face value of such money is equal to the value

⁴ Pigou, *The Veil of Money*.

of the metal contained in it, it is also called a full-bodied and full-weight coin.

Cash. The term Cash is used with a variety of meanings, viz., (i) coins and notes together, (ii) coins only, and (iii) small change. In bank accounts the term cash is used to mean currency in the till plus deposits in the central bank.

Paper Money. Paper Money means money made of paper. All countries use paper money nowadays. There are three types of paper money :

(i) **Representative or Convertible.** When the paper money merely represents a certain quantity of metal or coin and is convertible into them at the pleasure of the holder it is called Representative or Convertible. The "Gold Certificate" of U.S.A. is an example.

(ii) **Fiduciary.** When the paper money contains a promise to pay the holder a certain quantity of legal tender money, it is called Fiduciary. Such paper moneys are issued by the Government or by Central Banks. They circulate as money.

(iii) **Inconvertible or Fiat.** When the paper money is not convertible into anything and does not contain any promise to pay anything in return, it is called Inconvertible or Fiat Paper Money. Such notes are supposed to circulate because of the authority (or fiat) of the state. Actually they are accepted and used when the people required them as media of exchange and are reasonably certain that they will be accepted by others. "Money is accepted because it is accepted". (Samuelson).

Currency. The term Currency is used to include both coins and notes. In the foreign exchange market, however, the term is used to mean particular currency units for example the £ or \$.

The currency of a country consists of the following items :

(a) **Paper notes.** They are usually unlimited legal tender. The notes may be convertible, fiduciary or inconvertible. (Example : Indian notes of Rs. 2 and upwards).

(b) **The Standard money.** The standard money is always unlimited legal tender. It may be a note or coin. Nowadays it is always a token coin. The standard money is ordinarily not convertible into any valuable metal. (Example : the one rupee note and one rupee coin in India). Sometimes the standard money is convertible into gold and foreign currencies for foreign payments only.

(c) **Subsidiary Coins.** These are meant for small exchanges. They are made of base metals like copper, bronze or nickel. They are all token coins. (Example : Indian small coins from 1 P. to 50 P.).

✓ THE FUNCTIONS OF MONEY

The functions performed by money in a modern economic community may be described as follows :

1. *Money is the Medium of Exchange* : Money came into use to remove the inconveniences of barter. People exchange goods and services through the medium of money. Money by itself has no utility (except perhaps to the miser). It is only an intermediary. The use of money facilitates exchange, exchange promotes specialisation, specialisation increases productivity and efficiency. A good monetary system is therefore of immense utility to human society.

2. *Money is a Measure of Value* : Money is the measuring rod, by which the values of other commodities and services are expressed. Even when money is not used as a medium of exchange (for example in international barter transactions) it may be used for expressing the relative values of the commodities exchanged and for accounting purposes. Without a measure of value there can be no pricing process. Without a pricing process organised marketing and production is not possible. Thus, the use of money as a measure of value is the basis of specialised production. The measuring rod of money is also indispensable to all forms of economic planning. Consumers compare the values of alternative purchases in terms of money. Producers compare the relative costlines of the factors of production in terms of money and also plan their output on the basis of the money yield. It is therefore, highly important that the value of money should be stable.

3. *Money is the Standard of Deferred Payments* : Debts are usually expressed in terms of the money of account. Loans are taken and repaid in terms of money. The use of money as the standard of deferred or delayed payments immensely simplifies borrowing and lending operations and thereby facilitates the formation of capital markets and the work of financial intermediaries like Stock Exchanges, Investment Trusts and Banks. Money is the link which connects the values of today with those of the future.

4. *Money is a Store of Value* : Money, being generally acceptable, is the best form of reserve. Keynes places great emphasis on this function of money. Holding money is equivalent to keeping a reserve of liquid assets because it can be easily converted into other things. People therefore, normally wish to keep a part of their wealth in the form of money. This desire is known as liquidity preference. (See p. 299.) Money of course, is not the only store of value. People make provision for the future by purchasing shares and securities and durable assets like gold and precious stones.

The Significance of Money. A superficial view of the nature of money has led some writers to conclude that money by itself is of

no importance. Thus it has been said "Money is a wrapper in which goods come to you." "Money is the garment draped round the body of economic life". "Money is a veil behind which the action of real economic forces is concealed."

These aphorisms do not do justice to the important functions which money performs. Money promotes specialisation, enables production to take place in advance of consumption and facilitates planning of both production and consumption. Money has many advantages to the (i) consumer (ii) producer, and (iii) the business community. Without money, or some efficient substitute for money, the highly complicated economic system of modern times will not exist at all.

"The institution of money is an extremely valuable social instrument making a large contribution to economic welfare . . . money is not merely a veil or a garment or a wrapper".¹

Keynes and others are of opinion that the volume of employment can be increased and economic stability secured through monetary adjustments. Monetary policy is therefore an important part of economic policy. "In spiritual welfare the proper volume and distribution of money may be a secondary factor or no factor at all, but in shaping economic well-being it is a powerful force."²

"Tests of a satisfactory monetary system."—See Ch. 28.

COINS AND COINAGE

Coin. A coin is a piece of metal of definite design issued by the Government with a mark showing its legal tender value. A coin has two values (i) an intrinsic value (as a piece of metal) which depends on the market value of the metal, and (ii) a legal tender value or face value which is fixed by the Government. If the two values are equal the coin is said to be full-weight. If the face value is higher than the intrinsic value the coin is called token money.

Coinage. Coinage is the process of manufacturing coins. Nowadays it is done solely by the Government in Government mints. The importance of coinage has declined in modern times owing to the fact that in almost all countries money is made of paper and coins are used for small change only. In India the legal tender money (the Rupee) is issued partly in the form of nickel coins but, as they are token coins, they may more properly be described as notes printed on nickel.

Under a pure-metal standard (gold or silver), as it operated in U.K. or U.S.A., in the past, there were two varieties of coins (i) the full-weight standard coin (£ or \$) and (ii) small coins which were

¹ Pigou, *The Veil of Money*.

² Goldenweiser, *Monetary Management*.

all token coins. As regards standard coins the State allowed every citizen to tender bars of the standard metal to the mint and have them converted into coins of equivalent value without limitation of quantity. In some States this was done free of charge. This was known as *Free Coinage* or *Gratuitous Coinage*. Sometimes a small charge was made. The charge was called *Brassage* or *Seigniorage*. The rate at which the metal bars were converted into coins was known as the *Mint Price* of the metal.

Under a system of free coinage the exchange value of a coin or its purchasing power becomes automatically equal to the value of the metal contained in it. The exchange value of a coin, under the system of free coinage, varies with the fluctuations in the market value of the metal concerned. For example, the Indian rupee prior to 1893 contained one tola of silver and could be coined freely. When the price of silver began to fall from 1873 the exchange value of rupees also began to fall.

GRESHAM'S LAW

Sir Thomas Gresham, during the reign of Queen Elizabeth in England, enunciated the principle that, "bad money tends to drive good money out of circulation when both are full legal tender". This principle is known as Gresham's Law, although it was noted by other writers earlier.

The term "bad money" does not mean counterfeit coins. It means, worn out, clipped or underweight coins.

When "bad money" and "good money" are both in circulation people will use the "bad money" when making purchases and the "good money" will be hoarded. The natural human tendency is to retain the better coins and pass on into circulation the comparatively old and worn out coins. In former times, when coins made of gold and silver used to be in circulation, the full-weight coins were often melted down for making jewellery and for sale to foreigners by weight. In course of time the entire stock of "good money" might be driven out in this way, so that only "bad money" remained in circulation.

In modern times full-weight metallic coins are not used. But the principle of Gresham's Law operates in subsidiary coins and as between new notes and old and soiled notes. People generally try to keep fresh notes and shining coins in their pockets and pay out the soiled notes and worn out coins. Thus bad money drives good money out of circulation. Marshall put the Law in a general form as follows: "Gresham's Law is that an inferior currency, if not limited in amount, will drive out the superior currency."

Gresham's Law is of less significance under a paper money system. Under a metallic standard the "good money" can be melted down,

exported abroad and sold by weight. This cannot be done with paper money or subsidiary coins. Therefore, Gresham's Law is of very limited applicability in modern times when the paper standard is in almost universal use.

Gresham's Law cannot operate under the following circumstances :

(i) When the total volume of currency (good money together with bad money) is less than what is needed by the community for exchange purposes.

(ii) When the "bad money" is so bad that it is not accepted by the people.

RECOMMENDED READINGS

1. A. C. L. Day, *Outline of Monetary Economics*, Ch. I.
2. Kurihara, *Monetary Theory and Public Policy*, Ch. I.
3. Benham, *Economics*, Ch. XXX.

EXERCISES

1. What were the reasons for which barter came to be given up? Mention the important features of a money economy. (G.U. & D.U. '67)
2. Distinguish clearly between (a) standard money, (b) representative money, (c) credit money, and (d) fiat money. (Gau. B.A. '63)
- * 3. Explain the need for and the functions of money. (Compare C.A. Nov. '63).
4. What are the characteristics of money? Which of these do you consider most significant, and why? (G.U. and D.U. '67, '69).
5. What is Gresham's Law? Point out the different forms of its application and conditions essential to its operation. (Gau. B.A. '58).

CHAPTER 26

CREDIT AND BANKING

THE CREDIT SYSTEM

Definition and functions. A person is said to have 'Credit' when other people have trust or confidence in his honesty and in his financial capacity. A commercial transaction (like sale of goods) may be for cash or for credit. In a cash transaction the money due is paid immediately. In a credit transaction one party trusts the other to pay his dues at a later time.

When a credit transaction takes place it is usual and customary to draw up a document in which the terms of the transaction and the obligations of the parties are set out. Such documents are called Credit Instruments. Certain forms of credit instruments are in general use, viz., Promissory Notes, Bills of Exchange, *Hundis* etc. The practice of doing business through credit instruments is called the Credit System.

Credit instruments are usually transferable from one person to another and the same instrument can be used for a series of transactions. Thus suppose that A sells goods to B on credit and draws a bill on him. This bill can be used by A to pay his creditor C. C can use it to pay D and so on. Credit instruments can also be set off against one another. Thus, moneys payable by X under a bill can be cancelled by moneys due to him from another bill. The credit system *reduces the use of cash* and can be described as Deferred Barter. In modern times the credit system has been enormously extended so that it covers not only citizens of particular countries but also of different countries. Credit instruments are dealt with, on behalf of the parties thereto, by institutions known as Banks.

Bank Credit and Commercial Credit. In commercial transactions, the seller very frequently allows the buyer some time to pay. The wholesaler gives goods on credit to the retailer; the latter sells the goods and from the sale proceeds pays the wholesaler. Similarly the sellers of raw materials to manufacturing concerns frequently give time to the latter. Credit of this type is called Commercial Credit. Sometimes, however, the seller cannot afford to wait for his money. In this case the buyer may borrow the money from a bank. Credit of this type is called Bank Credit. The discounting of a bill of exchange is a typical case of the latter type of credit. Suppose that a

manufacturer sells goods worth Rs. 1,000 to a wholesaler who promises to pay the money three months later. The manufacturer will draw a bill for Rs. 1,000 plus interest for three months and the bill will be accepted by the wholesaler. The manufacturer will then get the bill discounted by a bank. The bank will pay him the amount due on the bill less interest for three months. The bank will collect the money from the wholesaler after three months. In effect the bank has advanced Rs. 1,000 to the wholesaler.

Bank Credit generally leads to an expansion of the money in circulation. (Banks can create credit. See p. 390.) Commercial Credit has no such effect. But it increases demand and may raise prices.

✓ **Consumer Credit.** Consumers frequently buy goods on credit. Hire-purchase contracts for furniture, radios, motor cars etc., are very common. In such contracts the buyer pays the price by instalments, monthly or weekly. The purchase price includes a charge for the hire of the article till full payment because the buyer does not become the owner till the last payment is made. Usually the purchase price also includes some payment on account of interest for the delayed payment. Consumer credit is advantageous to both buyers and sellers. It enables the former to buy goods on an easy payment basis and enables the latter to sell more goods. It also enables poor persons to tide over periods of temporary financial embarrassment. But too much consumer credit may have inflationary effects.

Credit Instruments. Credit instruments developed very early. We find evidence of their use among the ancient Hindus, Greeks and Romans. In modern times such instruments occupy a predominating position in commerce. The principal types of credit instruments now in use are described below :

1. *Promissory Note* : A promissory note is a *written promise to pay a certain amount of money on demand or on a certain date*. It may be drawn by private individuals, banks or the Government. In all cases where the credit of the party drawing it is good it may pass from hand to hand and be used for effecting transactions. In most countries nowadays banks, other than central banks, are prohibited from drawing notes payable on demand. Promissory notes drawn by the Central Bank or the Government and payable on demand are legal tender and circulate as money.

2. *Bill of Exchange* : A bill of exchange is the reverse of a promissory note. A bill of exchange is an *order by the seller on the buyer to pay a certain sum of money to a specified party or to his order*. It may be payable at sight or after a period of time. During this period the buyer may process, or resell or retail the goods so that he has funds in hand when the bill becomes due. The amount of the bill is so fixed that it includes interest. A bill of exchange usually

covers movements of goods either internally or internationally. But they may also be drawn for paying a debt or advancing a loan. Such bills are known as Finance Bills or Accommodation Bills.

3. *Cheque* : A cheque is a bill of exchange payable by a bank. Cheques issued by persons having credit are readily accepted by others in place of cash. Hence cheques can be described as "money substitutes".

4. *Hundi* : A Hundi is a negotiable instrument written in an Indian language. There are various forms of hundis in current use. Some *hundis* are exactly like bills of exchange. Some are like cheques and promissory notes. Some are combinations of bills of exchange and insurance policies. *Hundis* are governed by customary law.

There are other forms of credit instruments, e.g., banker's drafts, bonds etc.

Advantages of Credit. The advantages obtained from the use of credit instruments are as follows :

1. The use of cash is *reduced to a minimum*. Cross payments are adjusted without transfer of money as far as possible. This leads to economy.

2. Credit instruments are *very convenient* for making payments. The risk of carrying large amounts of cash is eliminated.

3. A credit instrument, as its name implies, *enables loans* to be taken in a convenient form. Such loans enormously facilitate trade, commerce and production. A credit instrument is "a bridge over time and space." It enables the buyer to pay after he has secured funds and enables the manufacturer to produce goods in anticipation of demand.

4. Credit instruments enable international trade to be conducted *without much movement of specie*.

5. As credit instruments constitute a large part of the *medium of circulation*, the monetary authorities can control prices by controlling the volume of credit.

The Dangers of Credit. Credit instruments and the credit system confer great advantages to society but under certain circumstances it leads to great evils. The chief dangers of credit are as follows :

1. Possibility of *over-issue*. If banks lend freely or if the Government issues credit instruments in large quantities, the total quantity of money may increase relatively more than the quantity of goods and services. This will lead to rise of prices and all the other evils associated with inflation.

2. According to Hawtrey expansion and contraction of bank credit is the *cause of trade cycles*.

3. Easy credit leads to *extravagance*. Business houses and industrial establishments tend to spend more when borrowing is easy. Consumers tend to be extravagant when credit is easy.

4. Credit *facilitates speculation* in the share and the commodity markets. As a result of speculation prices fluctuate widely and investment is retarded.

5. The credit system has aided the formation of *big trusts* and international monopolies by placing large funds at their disposal. ✓

DEFINITION OF BANKING

The term Banking is used in economics in a wide sense. *Any institution which lends money or provides credit to its customers is called a Bank.* An individual carrying on business in moneylending comes within the category. A Banker may be defined as, "a dealer in money" or "a dealer in credit".

The *legal definition* of banking is *narrower* than the *economic definition*. The banking laws of every country lay down which institutions can be called Banks. In India only joint stock companies holding a licence from the Reserve Bank can describe themselves as banks. An individual carrying on moneylending business cannot call himself a 'bank' or 'banker'. From the *economic standpoint*, however, he can be called a 'banker'.

Some definitions of bank and banking are quoted below.

"A Banker is a dealer in debt, his own and other peoples."
—Crowther.

"A bank is a financial intermediary, a dealer in loans and debts."—Cairncross.

"Banking means the accepting, for the purpose of lending or investment, of deposits of money from the public repayable on demand or otherwise, and withdrawable by cheques, draft, order or otherwise."—The Banking Companies Act, 1949.

✓ FUNCTIONS OF BANKS

Main Functions. There are various types of banks, each type specialising in particular kinds of business. But their functions in general, can be summarised as follows :

1. *Mobilisation of Savings* : Banks gather the savings of individuals through deposits. Deposits may be of various kinds, current, savings or fixed. Moneys in the current account can be withdrawn on demand, those in the other two are withdrawable subject to specified restrictions. A deposit is a loan to the bank and is a liability of the bank. Moneys in the current account are called Demand Deposits or Demand Liabilities. Those in fixed deposit accounts or savings accounts are called Time Deposits or Time Liabilities.

2. *Supply of Finance* : Banks lend money for industrial, commercial and other purposes. Loans may be given in a variety of ways, viz., cash credit, overdraft facilities and the discounting of commercial papers like bills of exchange, *hundis* etc. Commercial banks generally confine themselves to short term lending against readily realisable securities like gold, government promissory notes, bills of exchange and *hundis*. Other types of banks (e.g., Land Mortgage Banks, Industrial Banks) lend money for long periods against the security of immovable property and industrial assets.

3. *Creation of 'Money'* : Banks supply a part of the medium of exchange. Formerly private banks could issue notes which circulated as money. This power has now been withdrawn in most countries. But private banks still supply a part of the medium of exchange through their power of creating deposits. When a loan is given a bank may credit the amount to the deposit account of the debtor and empower the debtor to draw cheques on it. Such a deposit is called a "created deposit" to distinguish it from an actual deposit of cash by the customer. A bank can, within certain limits, create deposits without making any specific appropriation of cash for the loan. The ability of a bank to create claims against itself in the form of deposit accounts is regarded by some authorities as the fundamental characteristic of banking institutions. (See p. 390).

4. *Subsidiary Functions* : Banks perform a variety of miscellaneous functions on behalf of their customers. They act as agents for the purchase of shares and securities and for the collection and payment of bills. They can be appointed trustees, executors and administrators of estates. They keep valuables in safe custody. They issue letter of credit and traveller's cheques. They arrange for transfer of money from one place to another by banker's drafts or otherwise. Some banks deal in foreign exchange and foreign moneys can be obtained through them, subject to the foreign exchange regulations of the countries concerned.

Utility of Banking. The list of functions, given above, clearly show that banks perform very essential duties in modern societies. Without them, commerce and industry would be almost impossible. The following further points are mentioned in order to emphasise the *utility of banking*.

1. *Working capital*. Specialised production of the modern type is impossible without banks. A large part of the *working capital of industry is supplied by banks*. The function of working capital is to bridge the time-lag between the receipt of the sale price of the goods produced and the expenditure involved in producing them. Banks help to cover the lag by financing the purchase of raw materials and

other necessities. Production in anticipation of demand would have been very difficult without bank-finance.

2. *Underwriting.* Industrial Bank and similar institutions promote the formation of new companies by underwriting their shares. They also finance the purchase of capital goods. Both these processes increase investments. Production and employment are thereby increased.

3. *Finance of Commerce—internal and foreign.* Commerce is mostly carried on with the aid of bank-finance. Traders buy goods from manufacturers in anticipation of resale. It is impossible for most traders to pay for the goods purchased from manufacturers until they are resold to consumers. The difficulty is overcome through a bank-loan. The procedure is as follows: The manufacturer of the goods draws a bill of exchange on the trader. The trader accepts the bill. Thereafter the manufacturer discounts the bill with a bank and gets his money. The bank collects the money from the trader after a specified period. Thus the trader gets time to sell the goods and can pay the bank from the sale proceeds. Essentially the same procedure is followed in international trade. Banks finance both internal trade and international trade. They "oil the wheels of commerce."

4. *Banks finance consumers.* The payment of the price of costly consumer goods, like motor cars, may be spread over a period of time by securing a loan from a bank.

5. *Attracting Deposit.* Banks encourage thrift by providing opportunities for earning interest out of savings. Banks are the agencies through which the mobilisation of the savings of the community takes place and through which the collected savings are canalised to the production of new capital assets. Banks play an essential part in the process of capital formation in a country.

6. *Elasticity and Flexibility.* Bank money introduces an element of elasticity and flexibility into the monetary system of the country. Bank money can be quickly expanded to meet urgent needs. It can also be curtailed fairly quickly. In modern monetary systems bank money plays an essential part. Such moneys are also easily amenable to central bank control.

7. *Growth.* By encouraging savings and investment, banks increase productivity. They contribute to the growth of the economy. Economic development is impossible without an efficient banking system.

THE MONEY MARKET

The term money market denotes the market in which loans of money can be obtained. In this market, the banks are the 'sellers' and the borrowers are the 'buyers'; the thing purchased is called a 'loan'

and its 'price' is the rate of interest payable. In theory, whoever lends money is a 'banker'; but the banking laws of a country may restrict the use of the term 'bank' to institutions fulfilling certain requirements (e.g., in India only a joint stock bank with a licence from the Reserve Bank can call itself a bank). In such countries, the money market includes institutions which are technically not banks. The Sahukars and Shroffs of India are important constituents of the Indian money market although they cannot call themselves banks.

The Constituents of the money market are the following :
(i) Central Bank (ii) Commercial banks (iii) Investment or Industrial Banks (iv) Co-operative and Land Mortgage Banks (v) Exchange Banks (vi) Postal Savings Banks.

The money-market is usually not homogeneous. It is generally split up into different groups specialising in particular types of loans. Resources (and customers) do not move freely from one group to another and so the rate of interest varies. Each such group should properly be called a separate money market.

COMMERCIAL BANKS

Commercial Banks are those banks which finance trade and commerce with short term loans. They also lend money to industries but generally for short periods. Most of the Indian Joint Stock Banks are Commercial Banks. Commercial Banks which specialise in financing international trade and dealing in foreign moneys are also known as Exchange Banks.

INDUSTRIAL BANKS AND INVESTMENT BANKS

These banks borrow money for long periods and give long term loans to industries. They also organise and underwrite the sale of new issues of shares or debentures of companies. An Industrial Bank acts as the bridge between capital-users and capital-savers and has therefore been described as "the entrepreneur of entrepreneurs".

Industrial Banks and Investment Banks must be distinguished from Investment Companies which are financial institutions organised to make it possible for investors (particularly small investors) to obtain good returns on their investments. Safety is secured by pooling the investments of a large number of persons and distributing the purchases among a wide variety of companies, thereby getting the advantage of the principle of diversification of risks. The services of investment experts can also be secured. The Unit Trust of India comes within this category.

THE PRINCIPLES OF COMMERCIAL BANKING

Commercial banks work with short term funds. Their working capital consists mainly of moneys deposited by customers and withdrawable by them on demand or on short notice. If a bank lends such moneys for long periods or keeps them 'blocked' in any other way, it will be unable to meet the demands of its depositors for withdrawal of cash, and will be forced to go into liquidation.

Fractional Reserves. Every bank operates on the principle that its depositors will not all withdraw their cash simultaneously. Good bankers can anticipate what percentage of the total deposits will on average be withdrawn during a particular period. The banker keeps sufficient cash in hand to meet the expected withdrawals and lends out the rest. The money kept in hand is called the Cash Reserve.

The Cash Reserve is intended to meet average withdrawals in normal times. If, for any reason, a disturbance or panic occurs, the depositors will withdraw more than the average. If large withdrawals occur, there is said to be a "run" on the bank. In such cases the bank must secure money by converting the assets held by it into cash immediately. Assets which can be quickly converted into cash are called Liquid Assets. A commercial bank must keep in hand sufficient liquid assets. This is known as the Liquidity Principle.

Management of Reserves. It is said that, successful banking depends largely on the management of the reserve. The cash reserve held by a bank, together with the money kept by it in deposit with the Central Bank, constitutes its first line of defence in case of a run. In addition to these two items, a bank holds the securities given to it by people who have borrowed money from it. In case of a run the securities must be converted into cash. Using the term 'reserve' in a wide sense to include both cash and securities it can be said that a prudent bank should follow certain principles regarding the amount, character and the composition of its reserves. These principles are stated below.

1. *Amount* : The amount of the cash reserve must not be either too large or too small. If it is too small, the bank will be unable to meet demands from depositors for withdrawal. If it is too large, the percentage of profit will be reduced because the cash-reserve is an idle stock of money earning no interest. The appropriate amount of cash, which should be kept as reserve, depends on the probable rate of withdrawal. Each bank must determine the amount required after considering the business situation in the country at the relevant time and the psychology of its depositors. Banks rely, to a considerable extent, upon experience. In England it is usual to keep a cash reserve amounting to 8-10% of the deposits.

2. *Composition* : A bank should keep a judicious mixture of different types of securities, so that there is a diversification of risk. In England, banks usually keep about 10% of the deposits in the form of cash, 20% in the form of short term Government and private bills and the rest in other forms of securities.

A commercial bank must not "block" its funds by giving long term loans. It must not participate in industry and trade. It must not advance too large a part of its funds to a single enterprise for the failure of such an enterprise will involve liquidation of the bank. It is generally not considered advisable to invest too much in Government securities because the market value of a Government security depends on the policy of the Central Bank regarding the rate of interest. When the Bank-rate is raised, the value of Government securities fall and cause loss to the bank.

3. *Character* : A commercial bank must maintain liquidity of assets. The securities must be convertible into cash as soon as necessary.

It is said that, *good banker is one who knows the distinction between a Bill of Exchange and a Mortgage*. A bill of exchange is a credit instrument which is usually repayable within a short-time. A bill can be converted into cash before maturity by rediscounting it with the Central Bank. A bill of exchange, therefore, represents the type of security which is best for lending purposes, so far as a commercial bank is concerned. A mortgage, on the other hand, is a long term loan usually realisable after a suit in a court of law. A commercial bank must not invest in mortgages. It must keep its funds liquid by investing in easily realisable securities like bills of exchange.

Solvency and Liquidity. Solvency and Liquidity are two different concepts. The term 'solvency' refers to the *general financial position* of a bank. A bank is solvent when its total assets are sufficient to meet its total liabilities. The term "liquidity" refers to the *nature* of the assets. Liquid assets are those assets which can be converted into cash to meet the demands of depositors and creditors as rapidly as necessary. Gold, Government Promissory Notes and Bills of Exchange are liquid assets because cash can be obtained for them very easily. A mortgage is in the nature of a Frozen Assets because it takes time to recover the moneys due on it.

"'Liquidity' generally means capacity to produce cash on demand for deposits."—Sayers.¹

"The perpetual conflict which the banker has to reconcile is that between making as big profits as possible, and maintaining sufficient

¹ *Modern Banking*.

assets in a liquid form to be able to pay his debts on demand.”—A.C.L. Day.²

Solvency is no guarantee against bank-failure. A bank may be perfectly solvent (taking into account all its assets) but, if it cannot meet the claim of a depositor on demand, it will be closed down by order of court. A bank must therefore, keep its assets liquid.

There has been considerable discussion about how liquidity can be secured. Some authorities are of opinion that liquidity is secured if banks invest only in *real commercial bills*. A real bill is one which arises from a commercial transaction (like a sale of goods). Such a bill can be paid at maturity from the sale proceeds of the goods. It is self-liquidating. Other authorities are of opinion that liquidity is secured if the assets of the bank are *shiftable* to other parties at will. In such cases the bank can secure cash from the other parties when necessary.

The adoption of either of the two principles, self-liquidity or shiftable, can protect a commercial bank in normal times. But in times of crisis neither of them will suffice. In bad times, commercial bills are not always self-liquidating and there may not be any available party on whom the assets can be shifted. In such times the only source of cash is the Central Bank.

It is believed nowadays that *only those assets are really liquid which can be easily transferred to the Central Bank*. This includes rediscountable bills, gold and Government securities.

The Value of Cash Reserves. Excepting the customary cash reserve and the legal reserve required to be kept with the Central Bank, commercial banks generally invest the whole of their funds in loans. The practice is not good. The cash reserve is always considerably lower than the total liabilities, so if all the depositors simultaneously call for their money the banking system as a whole cannot meet it. A particular bank can meet withdrawals by getting cash from other banks or from the Central Bank but not all the banks simultaneously. When depositors have confidence in the bank, the reserve is not necessary; when there is no confidence only a 100% reserve is really safe, but no bank will earn profit under such a system. It is therefore said that, “modern private banking is an uneasy compromise of elements which are unnecessary if the sun is shining and insufficient if it is not”.

Statutory reserves sometimes cause bank failures rather than prevent it. In the Wall Street Panic of U.S.A. in 1929, the widespread run on banks forced some of them to withdraw cash from Federal Reserve Banks. Their reserve fell below the statutory requirement;

² *Outline of Monetary Economics.*

technically they became insolvent and were forced to close down, thus adding to the panic.

The amount of reserve held is no criterion of a bank's solvency. A bank may hold more than the customary reserve but if the value of its earning assets or securities falls for some reason they may become insolvent (e.g., a fall in the value of Government securities).

THE BALANCE SHEET OF A COMMERCIAL BANK *w*

The balance sheet of a bank shows in a consolidated form the total amount of its assets and liabilities and the main heads under which they are distributed. By way of illustration, is given below, the combined balance sheet of all the scheduled banks in India on a certain date.

<i>Liabilities</i> (in Rs. Crores)			<i>Assets</i> (in Rs. Crores)		
1. Paid up capital	..	33	1. Cash in hand and balance with the Reserve Bank	..	117
2. Reserve Fund and other reserves	..	24	2. Balance with other banks and money at call or short notice	..	16
3. Demand deposits	..	552	3. Investments in Government securities (including Treasury Bills)	..	340
4. Time deposits	..	252	4. Other investments	..	21
5. Other liabilities including bills payable	..	41	5. Loans, advances, cash credits, overdrafts, bills purchased and discounted	..	372
			6. Premises, furniture and fixtures	..	9
			7. Other tangible assets	..	27
		902			902

The items are explained below.

A. *Liabilities*

1. "Paid up capital". This includes the money paid by shareholders on their shares.

2. "Reserves". For the sake of safety every bank tries to build up a reserve fund. In India the Banking Companies Act, 1949 contains a mandatory provision for building up reserves. The ratio of paid up capital and reserves to deposits is a measure of the degree of protection afforded to depositors and the ability of the bank to attract deposits. A ratio of 10% is usually considered satisfactory.

3. "Demand deposits". This item includes all moneys in the Current Account which can be withdrawn without notice.

4. "Time Deposits". This item includes deposits which are un-withdrawable for definite periods and Savings Accounts which can be drawn upon subject to conditions and limitations.

5. "Other liabilities". This item covers money payable to other banks and unpaid bills due to others.

B. *Assets*

1. "Cash in hand and balance with the Reserve Bank". This item is the most liquid of all assets. It is the first line of defence when "runs" or other troubles occur.

2. "Balances with other banks". These are moneys due from banks other than the Reserve Bank. "Money at call or short notice" are moneys lent to customers repayable on demand or one to three days' notice. Both items are easily realisable.

3. "Investments in Government securities". These include both long term securities like Government Promissory Notes and short term securities like Treasury Bills. In times of trouble money can be secured against both types of securities very easily. The percentage of investments in government securities by commercial banks has increased during the war and post war years.

4. "Other investments". These include investments in shares and debentures of private firms.

5. "Loans, advances, cash-credits, overdrafts, bills purchased and discounted". These are the different forms through which a commercial bank lends money. These items cover the major part of a commercial bank's business.

6. "Premises, furniture and fixtures". These items are part of the fixed assets of a bank.

7. "Other tangible assets". This item includes properties acquired in course of business. In India, under the Banking Companies Act of 1949, banks are allowed to hold such assets only to a limited extent.

In every country banks are compelled to publish their balance sheets periodically. In India the bank balance sheet must be in the form prescribed by the Act of 1949. The balance sheet given above is only an itemised summary of the usual forms of assets and liabilities.

DO BANKS CREATE CREDIT ?

A bank deposit may come into existence in two ways. (i) A customer may deposit cash in the bank. Such deposits are known as *actual deposits*. (ii) A bank may sanction a loan to a customer but, instead of paying out the money immediately, may open an account

in his name, crediting him with the amount of the loan and allowing him to withdraw money according to his requirement by cheque or otherwise. Such deposits are known as *created deposits*.

The first type of deposit is a transaction initiated by the customer, the bank playing merely a *passive role*. In the second type of deposit the bank plays an *active role*. It opens a deposit account without putting in any extra cash. Since the borrower will withdraw the money in due course, the question arises, where will the money come from? Two answers have been given to this question.

(i) Hartley Withers and certain other economists say that the money can be *created* by the bank.

(ii) Dr. Leaf and other practical bankers say that the money comes from the *unwithdrawn portion* of other customers' deposits, if any.

According to the former view (that of Hartley Withers and others) it is possible for a bank to "create" money because of the following reason. Loans are taken for use. The money which the borrower takes out from a bank is paid to others. These others deposit the money in some bank of the country. (It is assumed that banking habits are well-developed in the country and money is not hoarded in the form of cash). Thus a new loan is always followed by a new deposit. "Every loan creates a deposit." In the banking system, considered as a whole, the new loans can be set off against the new deposits. The accounts of the different banks are adjusted through the clearing houses and no bank faces any difficulty. So the banks can create money by granting loans. Dr. Leaf and practical bankers do not agree with this view. According to them, a bank lends only when it has the money in cash and therefore it does not "create" money.

For a time there was great controversy between these two schools of thought. It is now believed that *both views contain elements of truth but neither is wholly right*.

Suppose that a bank called A gets a cash deposit of Rs. 1,000 from a customer. Suppose that it is legally necessary or customary in the country to keep a reserve of 10%. Then, can bank A treat the whole of this amount Rs. 1,000, as cash reserve and grant loans to the extent of Rs. 10,000? The answer is clearly in the negative. No bank will dare to do so, for, the debtors will not limit their withdrawals to Rs. 1,000. The bank cannot lend ten times the cash in hand. But the bank can reduce its cash to one-tenth of its deposits. The bank can keep 10% of Rs. 1,000, i.e., Rs. 100 in hand and lend out or purchase securities for Rs. 900. There will be no difficulty in finding cash for withdrawals. The bank is only lending that portion of a deposit which is expected to remain unwithdrawn.

The books of the bank now have a record like this.

<i>Liabilities</i>		<i>Assets</i>	
Deposits	Rs. 1,000	Cash	Rs. 100
		Loans & Investments	Rs. 900
	Rs. 1,000		Rs. 1,000

But the story does not end here. The 900 rupees lent out or invested by bank *A* must finally be received by some persons and they must deposit it somewhere. Suppose that the money is deposited in bank *B*. Then *B*'s cash will increase by Rs. 900. *B* will, like *A*, keep 1/10th of Rs. 900 as reserve and lend out the balance Rs. 810. Suppose that the new loans, amounting to Rs. 810, now reach bank *C*. Bank *C* will keep 1/10th of this sum (Rs. 81) in hand and lend out the rest (Rs. 810—Rs. 81=Rs. 729). The process will go on until the last deposit is too small to generate a fresh loan. Finally when the banking system comes back to equilibrium the total loans generated will be Rs. 900+Rs. 810+Rs. 729+... up to Rs. 0. The sum of this series is Rs. 9,000. This sum, with the original deposit of Rs. 1,000, comes up to Rs. 10,000. Thus, in the banking system as a whole, there will be deposits amounting to 10 times the original increase in the cash reserve. The final position of all the banks together will look like this :

<i>Liabilities</i>		<i>Assets</i>	
Deposits	Rs. 10,000	Cash	Rs. 1,000
		Loans & Investments	Rs. 9,000
	Rs. 10,000		Rs. 10,000

From the example given above it is apparent that in a country with a developed banking system, the total loans and advances are many times larger than the total cash reserves. An individual banker (following prudent policy) may lend only from the money which he has received but the lending activities of a large number of banks automatically create more loans than the cash in their hand. Thus the *banking system, as a whole, can create credit*. Increase of credit means an increase in the money-supply of the country because the money lying in a credit account can be used for making payments (by cheque or otherwise).

Limitations on Credit-Creation: Banks cannot create credit to an indefinite extent. The limitations on their power to create credit are enumerated below.

1. *Lack of securities.* Banks cannot expand deposits by granting loans and advances unless proper securities are available. Crowther

observes that, "The bank does not create money out of thin air, it transmutes other forms of wealth into money". The total volume of income-yielding securities available in the country, sets the overall limit to the process of credit creation.

2. *A bank cannot "force" the taking of a loan.* Loans are taken only when sound investment opportunities are available. During recessions and depressions deposits tend to go down. The business situation in the country is an important factor which determines the volume of credit.

3. *Lack of cash.* The total amount of cash, available to the banking system, limits the volume of credit that can be created. Credit is based on cash. The banks must keep a certain percentage of cash reserve. The total volume of credit cannot ordinarily be larger than the total amount of cash available multiplied by the customary reserve-ratio. The Central Banks control credit by measures, like open market operations and variations of the reserve ratio, which affect the quantity of cash in the hands of the banks and thereby influence their lending policy.

4. *The habits of the people.* The habit regarding the holding of cash can affect credit creation. If liquidity-preference increases, there will be less cash in the hands of the bank and they will be forced to lend less. In countries with an under-developed banking system, the people tend to hoard cash. This reduces the power of banks to create credit.

5. *Leakages.* In the chain of deposit creation, as shown in the example given above, there may occur leakages. Some borrowers may keep a part of their money in hand without putting it in a bank. The total volume of deposits will then be lower than the maximum possible. A similar leakage may occur to the bank's vaults. A particular bank in the chain may choose to keep a higher reserve ratio and lend less.

6. *The Central Bank's policy.* The policy regarding open market operations etc. may affect the total cash reserves of the banking system and may make the total created credit less or more than what it would otherwise be.

THE ESSENTIALS OF A SOUND BANKING SYSTEM

The essential elements that must be present in a sound banking system are enumerated below.

1. **Safety.** Bank deposits constitute the bulk of the medium of exchange in developed economies. So banking must be safe. It is necessary that banks should be in a position to repay deposits whenever demanded. When a bank becomes insolvent a large number of depositors lose their money and suffer great hardship. Too many bank failures in a country will make the people hoard money instead

of putting them in banks. This will prevent the development of banking and injuriously affect production and trade. The safety of banks is therefore of great importance. In many countries there are legislative measures intended to secure safety of the banking system. But good laws alone cannot create good banking. Good banking is the product of good bankers. The best method of securing a good banking system is to develop honesty and efficiency among bankers.

2. **Availability.** The banking system should be spread widely and evenly throughout the country. The facility of obtaining bank credit and of keeping moneys in banks should be available to all people whatever be the area in which they reside and whatever be the industry trade or profession they follow. In India and many under-developed countries, banks tend to concentrate their activities in the big towns. This tendency should be counteracted by appropriate measures.

3. **Liquidity.** The commercial banks are under an obligation to pay their depositors in cash either on demand or on short notice. Failure to do so involves insolvency. Banks must therefore maintain sufficient liquidity in their assets. They should lend money against securities which are readily realisable. In many countries legal measures have been adopted to ensure liquidity.

4. **Elasticity.** Within certain limits it is possible for the banking system to create credit. Banks can lend money by merely crediting borrowers with deposits on their books. In their lending operations banks are not restricted to the voluntary savings available in the community. The power to create credit, judiciously used gives elasticity to the supply of loanable funds. Certain economic operations can be financed by the simple process of expanding bank credit. Economic activity is promoted by making it possible for businessmen and industrialists to obtain working capital for current operations. A sound banking system must have the quality of elasticity.

5. **Stability.** There must be stability in the operations of the banking system. There must not be undue expansion or contraction of bank credit. Undue expansion will create an artificial boom while undue restriction will harm industry and trade. It is the duty of the Central Bank of the country to secure stability of the banking system by the use of the various economic and administrative weapons with which it is endowed.

RECOMMENDED READINGS

1. Sayers, *Modern Banking*, Chs. I, II and V.
2. A. C. L. Day, *Outline of Monetary Economics*, Ch. 10.

3. Kurihara, *Monetary Theory and Public Policy*, Ch. 3.
4. Cairncross, *Introduction to Economics*, Ch. 29.
5. Samuelson, *Economics*, (9th edition), Ch. 16.

EXERCISES

1. Point out the importance of credit. Distinguish between bank credit and commercial credit. (Gau. B.A. '64).
2. Discuss the influence of credit on production. (Gau. B.A. '62).
3. Discuss the role of banking in the working of an economy. (Compare C.A. May '65).
4. What are the considerations which guide a sound and prudent banker in determining the amount, composition and character of his reserve? (C.U. B.Com. '62).
5. "A constant tug of war between the competing aims of liquidity and profitability summarises the functions of a modern bank." Discuss.
6. Explain how 'Loans make deposit'. What are the limitations to such credit creation by banks? (Gau. B.A. '63).
- * 7. Can Banks create credit? If so, how and to what extent? (B. Com. '66; Mysore B.Com. '67).
8. What are the main functions of commercial banks? How does it create credit? (C.U. B.A. '66).
9. Explain clearly how the commercial banking system of a country can create money. What are the limits of such money creation, if any? (C.U. B.Com. '74).
10. Explain how the banking system creates deposits. (C.U. B.A. '74).

CHAPTER 27

THE VALUE OF MONEY

DEFINITIONS

Value of Money. The Value of Money means the *purchasing power of money measured in terms of commodities and services*. The value of Re. 1 is equal to the amount of commodities and services which Re. 1 can buy.

The number of commodities and services, available for exchange with money, is very large. They have different prices. It is therefore impossible to express the value of money in absolute terms. But we can express the value of money relatively, *i.e.*, we can say by how much the value of money has changed from one time period to another. This is done through Index Numbers of Prices.

Price Level. The prices of the different commodities and services in a country can be averaged. *The average of all prices is called the Price Level*. The purchasing power of money depends on the Price Level. If the price level rises, money buys less and we can say that its value has fallen. Conversely, if the price level falls, money buys more and we can say that its value has risen. Thus, *the value of money varies inversely with the price level*.

INDEX NUMBERS OF PRICES

Definition. An Index Number of Prices is a number representing the *average price* of a selected group of commodities at a particular time. This number is always expressed comparatively, *i.e.*, in relation to the average price of the *same group* of commodities at a different time.

Method of Construction. The method of constructing Index Numbers is illustrated below.

Suppose that the price of rice per Kg. was 40 P., 60 P., 50 P., and Re. 1, in years I, II, III and IV respectively. Let us take year I as our starting point or base and represent the price in that year, 40 P. by 100. Then the price in year II, 60 P. will be represented by the figure 150. The figure 150 is called the *price-relative* of rice in year II. By a similar method the price-relative of rice for years III and IV are found to be 125 and 250. These price-relatives show at a glance in what proportion the price of the selected commodity has

changed over a number of years. If we now take a group of commodities, find out their price-relatives and list them in a chart, it will look like the following :

Price-Relatives

	Year I	Year II	Year III	Year IV
Rice ..	100	150	125	250
Sugar ..	100	116	113	140
Fish ..	100	120	140	200
Oil Etc. ...	100	130	150	214
Total ..	400	516	528	804
Average ..	100	129	132	201

The average of price-relatives in year I is 100. Those of years II, III and IV are 129, 132 and 201 respectively. *These numbers are Index Numbers of prices.* They show how the price level of *this particular group of commodities* has varied from year I to year IV. They show that prices were 29% higher in year II, 32% higher in year III and 101% higher in year IV. The purchasing power of money over *this group* of commodities has *fallen* correspondingly. If we increase the list so as to include the price-relatives of *all commodities and services* the Index Number obtained will show changes in the purchasing power of money because the purchasing power of money is the inverse of the price level.

Types of Index Numbers. To show changes in the general price level we must take price-relatives of *all* commodities and services. But index numbers may also be constructed for *particular and specific purposes*. For example, we can select price-relatives of only such commodities as are consumed by an average working class family. The index number so obtained will show how the price level of *commodities consumed by the working class* has varied, *i.e.*, it will show variations in the cost of living and will be called the Cost of Living Index Numbers. Such commodities are called the 'must' goods. Similarly we can construct index numbers showing variations in the prices of raw materials, of manufactured goods and of goods exported and imported.

Weighted Index Numbers. An arithmetic average of price relatives attaches equal importance to all the items of goods selected. But when constructing Index Numbers for particular purposes (*e.g.*, calculating cost of living) all goods are not of equal importance. Surely

sugar is not as important as rice to a working class family. If between year I and year II the price of rice rises by 50% and that of sugar falls by 50% the index number of year II will remain unchanged but the cost of living is actually very much higher. This difficulty is solved by first finding out the *relative importance* of the different commodities chosen. Suppose that the relative importance of the 4-commodities given in the table above are in the ratio of 8, 1, 5, 6. These numbers, called "weights", are then multiplied with the corresponding price relatives and an average taken as follows :

	Year I	Year II
	Price-Relatives×Weight	Price-Relatives×Weight
Rice ..	$100 \times 8 = 800$	$150 \times 8 = 1200$
Sugar ..	$100 \times 1 = 100$	$116 \times 1 = 116$
Fish ..	$100 \times 5 = 500$	$120 \times 5 = 600$
Oil ..	$100 \times 6 = 600$	$130 \times 6 = 780$
Total	$100 \times 20 = 2000$	2696
Average	100	134.8

The figure 134.8 is called the Weighted Index Number for year II. There are different methods of selecting the weights. In the case of cost of living index numbers, the weights are obtained after a study of working class budgets.

Difficulties in the Construction of Index Numbers. There are many difficulties in the construction of index numbers. Certain general principles, which must be followed when constructing them, are enumerated below.

1. *The Choice of the Base Year* : The base year is the year with reference to which price-relatives are calculated. The base year must be a *normal or average year*, neither too prosperous nor too depressed. Usually the year preceding a great disturbance is chosen as the base, e.g., 1913 and 1939. Sometimes the average figure of a number of years is taken as the base. Sometimes there is no fixed base. The figures of the previous year are taken as the base of the next year. Such index numbers are called "Chain Index Numbers."

2. *Selection of Commodities* : When constructing index number of general prices, the number of commodities taken into consideration must be as large as possible. For other purposes the selected commodities must be really important and representative. In cost of living index numbers only those commodities, which are actually consumed by the class under consideration, are to be selected.

3. *Collection of Statistics* : The figures collected must be accurate. Difficulties sometimes arise as to which figures are to be taken into consideration, wholesale prices or retail prices or prices in particular areas. Choice in such matters will depend on the purpose for which the index number is required. For the general price level, wholesale prices are more important, while for cost of living index numbers retail prices are more relevant.

4. *Averaging* : There are many different methods of averaging. e.g., Arithmetic, Geometric, Harmonic etc. Usually arithmetic averages are taken but it is not always the most appropriate.

Use of Index Numbers. Index numbers can be used for measuring *all types of quantitative changes*. Economic magnitudes like prices, wages, imports, exports, production, employment, income etc., are constantly changing. With properly constructed index numbers, we can *compare these magnitudes* for different times and different places and draw conclusions of economic importance. Decisions regarding economic policy must be based on the broad trends of factors like prices, wages etc. These trends can only be assessed with the aid of index numbers. *Cost of living index numbers* can be put to practical use in various ways. In some countries they are related to wages. Wages are made to rise and fall with movements in the cost of living so that labour unrest may be avoided.

Limitations of Index Numbers. In spite of all their advantages index numbers must be used with caution. Too much importance must not be attached to them on account of the following reasons :

1. *Statistics are not always accurate.* Index numbers based on false statistics are worse than useless.

2. There are *inherent defects in some types of index numbers*, e.g., weighted index numbers. The selection of weights is arbitrary and based upon the personal inclinations of the statistician. Even if weighting is based upon relative consumption, the final figures are only approximations because no two families spend in an identical manner. Cost of living index numbers suffer from another type of defect. Incomes vary widely and different income groups have different consumption habits. Even within the same income level there are different groups among whom the items consumed and their relative importance vary widely. There ought to be as many different cost of living index numbers as there are groups within the community. In practice it would be difficult to construct so many index numbers.

3. *No inferences should be drawn by comparing index numbers of years separated by a long period of time.* The uniformity of basis essential for comparison between different years may not exist. Consumption habits and standards of living change in course of time. Methods of production and the type of goods produced do not remain

the same. New commodities come into existence and old commodities disappear. These factors might be ignored in the short period. But long run comparisons (e.g., between 1850 and 1950) may be thoroughly misleading.

4. *Index numbers of different places are hardly comparable.* The significance of prices to consumption varies according to taste, habits, climate etc. The cost of living index number of London will include coal prices as an important item. In Calcutta and Bombay they are not important. Hence, a comparison of the cost indices of these places is meaningless.

THEORIES OF VALUE OF MONEY

There are different theories about how the value of money is determined. In the nineteenth century, when money was made of gold and silver, it was believed by some writers that the value of money was determined by the cost of production of the metal with which coins were manufactured. Nowadays money is made of paper, the cost of production of which is negligible. In modern monetary systems the value of money has no connection with the cost of production of money.

At present there are two theories regarding the value of money : (i) the Quantity Theory, according to which the value of money depends on its quantity and (ii) the Savings-Investment Theory, according to which the value of money depends on the volume of savings and investments in the country.

The Quantity Theory has been represented in the form of two equations, one by Irving Fisher and the other by Cambridge economists. Both these equations have been deduced from the peculiar nature of the demand for money and the supply of money.

THE DEMAND FOR MONEY

The demand for money is not of the same nature as the demand for consumable goods like wheat or coffee. Goods and services are demanded because of the utility they possess. But money has no utility by itself. It cannot be consumed directly. It is useful only if it can be exchanged for other goods and services. With the exception of a small number of misers and hoarders, men want money not for its own sake but in order to have command over commodities and services.

Demand for money according to the Quantity Theory : Irving Fisher and many earlier writers on monetary theory were of opinion that people wanted money only for effecting purchase and sale transactions. Therefore, the demand for money was quantitatively equal to the total value of goods and services offered for sale in the community

concerned. Against this conclusion it can be argued that : (i) a part of the existing money is not used for exchange purposes and (ii) increase or decrease in the quantity of goods and services may lead to increase or decrease in the quantity of money in circulation.

Modern views : Modern writers explain demand for money in a different way. *The demand for money is a demand for a stock of money "to hold"*. People require money in order to make their purchases and to keep something available to meet emergencies. For these purposes they hold money in the form of currency in their pockets and deposits in their banks. The amount held varies. It is large immediately after pay-day but dwindles gradually till the next pay-day arrives. Excepting paupers, everybody holds something. The sum total of the holdings of everybody is the demand for money.

According to Keynes, there are three motives for holding money : the Transactions Motive ; the Precautionary Motive ; and, the Speculative Motive. (See p. 299).

The Elasticity of Demand for Money. According to the traditional view, *the elasticity of demand for money is unity*. A commodity is said to have unit-elasticity when its total exchange value (=the total expenditure of the consumers on it) remains the same at all prices. (See pp. 97-8). We can apply this definition to money. The total stock of money in the community exchanges for the total stock of goods and services offered for sale in the community. In the short run the volume of output is more or less constant. The constant stock of output exchanges for the total amount of money in the community, whatever it may be. Hence, the aggregate exchange value of money is constant.

The argument stated above is *based on unreal assumptions*. It is not true to say that the total stock of money exchanges for the total stock of goods, because a part of the money may not be used for exchanges. Also, when money supply changes, production and employment are affected and changes occur in the quantity of goods and services produced in the community. Conversely, when there is a change in the volume of output, the quantity of money also changes. Therefore, the exchange value of money (in the aggregate) is not constant. Hence, *the elasticity of demand for money is not unity*. According to Keynes, if there are unemployed resources in a country, increase of money will raise employment and not prices. The elasticity of demand for money may be unity in the theoretical stationary state but not in the actual world. The traditional view on this matter is "a static view of the dynamic world".

SUPPLY OF MONEY

The total quantity of money used in any community is made up of *two parts* (i) legal tender money and (ii) bank money. The quantity

of legal tender money depends, in a gold standard, on the supply of gold ; and, in a paper standard, on the monetary policy of the Government. The quantity of bank money depends on the lending policy of the banks which depends on the customary practices regarding the ratio to be kept between cash and credit. The Central Bank can control the volume of credit money by making less or more cash available to the banking system. Subject to the Central Bank's control, the banking system of a country can "create" money by giving more loans and "destroy" money by curtailing loans.

Under a Gold Standard, the supply of gold is the primary factor determining the quantity of money. Discovery of new gold mines, increase of supply from old mines and diversions from non-monetary uses of gold, sooner or later reaches the Central Bank's vaults and increases its reserves. This leads to increased note issue. Under a pure gold standard, with free coinage, gold can be converted into coins at the option of the holder of the gold. Increase in the quantity of coins and notes in due course increases the reserves of the banks and leads to the creation of more bank credit. Thus the total quantity of money increases.

Under a Paper Standard the supply of money depends on the policy of the Government and the Central Bank. The greater part of legal tender money consists of paper notes the quantity of which is determined by the Central Bank. Nowadays, Governments do not print notes directly. When the Government requires money it borrows from the Central Bank against *ad hoc* securities.¹ The Central Bank issues notes against those securities. When the Government reduces its indebtedness to the Central Bank, the volume of note issue is automatically reduced. As regards Bank Money or Bank Credit, its volume depends on the lending policy of the banks. The Central Bank can control the lending policy of the banks through methods like, Variation of the Bank Rate, Open Market Operations etc. *Thus under a Paper Standard, the volume of legal tender money and the volume of bank money are both determined by the monetary policy of the Government and the Central Bank.*

THE VELOCITY OF CIRCULATION

Definition. The term Velocity of Circulation is used to denote the average number of times a single unit of money changes hands in course of transactions during a certain period of time. If a rupee note can perform 5 transactions on average and the total number of notes in circulation is 1000 Crores, then the total value of transactions which can be done with these notes is $5 \times \text{Rs. } 1000 \text{ Crores} = \text{Rs. } 5000 \text{ Crores}$.

¹ Kurihara, *Monetary Theory and Public Policy*, Ch. 3.

Velocity of Circulation of money can be expressed in two ways : the Transactions Velocity and the Income Velocity. The Transactions Velocity of Money is the ratio between the total value of transactions in the community during a certain period of time and the quantity of money.

If P = the price-level, T = total quantity of goods and services entering into monetary transactions, M = total money supply and V = the transactions velocity of money, then $MV = PT$. This is the simplified form of the Quantity Theory of Money. From this equation it follows that, $V = PT/M$. Therefore, the transactions velocity of money = total value of transactions (PT) $\div$ money supply (M).

The Income Velocity of Money is defined as the ratio between the National Income and the total money supply. If Y is the national income and M is the total money supply, the Income Velocity of Money = Y/M . The Income Velocity measures the average number of times a single unit of money is received as income (by the final income-recipients) during the period under consideration.

It may seem impossible to measure velocity of circulation because it is impossible to follow a unit of money and count all the transactions in which it takes part. A rough idea of the average value of the transactions velocity can be obtained by dividing, the total value of transactions effected by transfer of demand deposits (by cheque or otherwise) by the average amount of demand deposits during the period. This method is appropriate for countries like U.S.A. or U.K. where monetary transactions are mostly done through cheques. The Income Velocity of Money is easier to calculate. It is obtained by dividing the National Income by the average money supply during the income period.

Factors Determining Velocity of Circulation. The velocity of circulation of money measures the speed with which money changes hands. The transactions velocity is large when receipts and disbursements of money follow each other rapidly, so that the money reserves held by individuals and firms are small. The transactions velocity depends fundamentally on the *forces that determine the size of the liquid reserves held by the community*. Normally there is a tendency to keep such reserves as low as possible because idle cash earns no income.

The speed with which money changes hands depends on the spending habits of the individuals in the community. The spending habits are determined by the following factors : the organisation of production ; the system of exchange ; the methods of income-payment followed in the country ; technological changes ; population growth ; profit expectations ; interest rates ; investment opportunities ; and, the confidence of the people in the monetary system.

The velocity of circulation is likely to be high in countries with developed banking and financial institutions because such institutions promote business transactions. The velocity of circulation is usually high during times of boom and low during depressions.

THE QUANTITY THEORY : FISHER'S EQUATION

According to the Quantity Theory, the *value of money depends primarily on its quantity*. This proposition is deduced from the peculiar nature of the demand for and the supply of money.

The Demand for Money is, according to the Quantity Theorists, equal to the total value of goods and services exchanged for money. Let,

T = the total amount of goods and services exchanged for money, and

P = the price level.

Then PT = the total cash value of all goods and services exchanged for money.

= the Demand for Money.

The Supply of Money, according to the Quantity Theorists, depends on two factors : the quantity of money and its velocity of circulation. Let,

M = the total quantity of legal tender money.

M^1 = " " " " " credit money.

V = " velocity of circulation of M .

V^1 = " " " " " " M^1 .

The quantity of money must be multiplied by its velocity in order to obtain total money supply. If one unit of legal tender money can be used V number of times (the definition of velocity of circulation) then, the total value of all transactions which can be done with M units of money is MV . Similarly the total value of all transactions which can be done with credit money is M^1V^1 . Hence,

$MV + M^1V^1$ = the Supply of Money.

But the demand for money must be equal to its supply. Hence,

$PT = MV + M^1V^1$.

The Equation, $PT = MV + M^1V^1$ is known as Irving Fisher's Equation for the value of money.² He popularised this form of the Quantity Equation although it was known to and used by several earlier writers.

Fisher's Equation can be rewritten in the following form :

$$P = \frac{MV + M^1V^1}{T}$$

² Fisher, *The Purchasing Power of Money*.

From this form of the equation it is clear that the Price Level varies directly with Money Supply and inversely with the volume of goods and services. Fisher went a step further and argued as follows :

In the short run V , V^1 , T , and the ratio between M and M^1 remain more or less constant. T , the volume of transactions, depends upon technological factors, the size of the population, the consumption habits of the people and the percentage of barter transactions in the community. V and V^1 depend upon custom and business habits of the people. The ratio between M and M^1 depends on banking policy and customary practices regarding cash reserves. None of the items V , V^1 , T and the ratio between M and M^1 change appreciably in the short run. Therefore, it can be contended that the *price level P varies directly with the quantity of money $M+M^1$.*

Irving Fisher further maintained that the Quantity Equation is *true in the dynamic sense*. When a change occurs in any one or more of the items included in the equation, the equation does not break down ; the different components of the equation continue to be related to one another in the way shown in the equation.

Fisher's equation is based on what is called the "Cash Transactions" approach.

Criticisms of the Quantity Theory. The Quantity Theory of Money has been subjected to many criticisms. The important criticism are stated below.

1. *Fisher's Equation is a truism.* All that it states is that the means of payment ($MV+M^1V^1$) must equal the total payments actually made (PT).

2. *Effect of inactive balances.* Under Fisher's formula, the price level depends upon the total quantity of money. *But it is only a part of the total quantity of money which influences prices.* There always exists inactive balances (hoards) which exert no pressure at all on the prices of goods and services. This is clearly seen during depressions.

3. *Unrealistic assumptions.* The Quantity Equation cannot be used for analysing the effects, of changes in M , M^1 or T , on the price level except on the assumption that, "*other things remain constant*". But in the case of monetary variables such an assumption *cannot be made*. When M changes, T and V both change. When T changes, M , M^1 , V and V^1 change. The net effect on the price level of a change in any of the variables of the quantity equation depends on how the other variables are simultaneously changed.

4. *The Quantity Equation does not show the process through which changes in the amount of money affect the price level.* Keynes put great emphasis on this objection against the Quantity Equation. He observed that :

"The fundamental problem of monetary theory is not merely to establish identities or statistical relation . . . but to treat the problem dynamically, analysing the different elements involved in such a manner as to exhibit the causal processes by which the price-level is determined and the method of transition from one position of equilibrium to another".³

5. *Assumption of Full employment.* Increase in the quantity of money does not always increase prices. If there are unemployed resources increase of money increases employment and not prices. As Keynes points out, *the Quantity Theory is based on the assumption of Full Employment.*

6. *The value of money determines the quantity of money.* According to Quantity Theory, as increase in the supply of goods or T will cause a fall in the price level P . But under the present monetary and banking practices, *increase in the supply of goods almost always leads to an increase in the supply of money* (through creation of credit and otherwise). M and M^1 therefore depend on T ; they are not independent variables. If this view is correct, the value of money is not determined by its quantity; on the contrary, it is the value of money which determines its quantity. Crowther says that, "The modern tendency in economic thinking, in fact, is to discard the old notion of the quantity of money as a causative factor in the state of business and a determinant of the value of money and to regard it as a consequence".⁴

7. *Prices may change and the value of money may vary for reasons entirely unconnected with the quantity of money.* Some examples are given below :

(i) Changes in the level of efficiency wages may change costs of production and affect prices.

(ii) If increase of output occurs under conditions of diminishing returns, marginal costs will rise and prices will rise. Similarly prices will fall if production increases under conditions of increasing returns.

(iii) Increase and decrease of monopoly power will respectively increase and decrease prices.

(iv) Prices are affected by variations in effective demand or expenditure. Consumption expenditure and investment expenditure both vary as also the proportion between them.

8. *A misleading emphasis.* According to Crowther⁵ the Quantity Theory puts a misleading emphasis on the importance of the quantity of money as the cause of price changes and pays too much attention on the level of prices. In the short run these principles of the

³ Keynes, *Treatise on Money*, Vol. I.

⁴ Crowther, *An Outline of Money*, Ch. IV.

⁵ *Ibid.*, Ch. V.

Quantity Theory are not in accord with facts. In actual life the price level and volume of production move up and down in a cyclical pattern. There are times when production and prices are at a low level and times when they are at a high level. A period of low prices and low production is called 'Depression' and a period of high prices and high production is called 'Prosperity'. Low prices during depressions are not caused by shortage of money because in such times we find unused and unwanted money lying in banks; nor are high prices during prosperity caused by excess of money because we usually find a tightness in the money market in those times. *So variations in the quantity of money do not cause short-period price changes*, particularly those associated with trade cycles. The quantity theory is not an adequate explanation of these phenomena.

Conclusion. In spite of all the criticisms levelled against the Quantity Theory it is not entirely valueless. Economic history shows that periods of rising prices were periods when money supply was large, *e.g.*, the inflations after 1918 and during 1939-45. The Quantity Theory draws pointed attention to one important factor which causes price change, *viz.*, the quantity of money. It is admitted that the quantity formula, "hides many links in the chain of causation", but it is undisputed that the formula gives us *a rough and ready method* of determining the effects of changes in the quantity of money and certain other factors influencing the price level. Robertson,⁶ therefore, calls the Quantity Theory, "a serviceable platitude".

THE CAMBRIDGE EQUATION

Economists of Cambridge evolved a different version of the Quantity Equation. The Cambridge economists start from the fact that every individual wishes to hold a balance in the form of money to make his purchases and to meet emergencies. The sum total of individual balances make up the balance which the community as a whole desires to hold. Suppose that the community desires to hold command over K units of goods. If P is the price level, then PK represents the demand for money. But the demand for money must be equal to its supply. Therefore $PK=M$ where M is the quantity of money. This is the basic Cambridge Equation.

Fisher's equation can be put in a simplified form as $PT=MV$, where M stands for the total amount of money (cash+credit) and V stands for the velocity of circulation of money (including both cash and credit).

From this simplified version, we get $M/P=T/V$. In the Cambridge equation, $M/P=K$. Hence, $K=T/V$. Therefore, K of the

⁶ Robertson, *Money*.

Cambridge equation is only another mode of expressing the transactions velocity of money. Fisher's equation starts from transactions and is called the *cash-transaction standard*; the Cambridge equation starts from balances people wish to hold and is therefore called the *cash balances standard*. Most of the criticisms made against Fisher's equation also apply to the Cambridge equation. According to Keynes neither equation shows the causal processes by which the value of money is determined.

SAVING, INVESTMENT AND THE VALUE OF MONEY

According to the Savings-Investment theory, price changes in the short run depend on the *volume of spending* in the community. Prices are low during depressions because there is a lack of spending in the community and effective demand is at a low level. ("Effective Demand"—see Ch. 33). Disinclination to spend is not due to absence of want but is due to *lack of means to spend*. The means of spending come from the income earned. *Income is the crucial factor on which spending power depends*. If the level of income moves downwards, people spend less and the price level goes down. When the level of income rises, people spend more and the price level tends to move upwards. *Therefore, price changes in the short period are caused by variations in the level of income.*

The level of income depends upon the volume of savings and the volume of investment in the community. Therefore the root cause of price changes and the fundamental principles by which the value of money is determined are to be found in the volume of savings and the volume of investments in the community.

Definition of Saving and Investment. From the standpoint of an individual, 'saving' is that part of his income which he does not spend. This may be called the *voluntary positive savings of an individual*. The sum total of the positive savings of individuals is not necessarily equal to the total savings of the community because increase in the saving of one person usually causes a reduction in the saving of other persons.

The term Investment, according to popular usage, means the purchase of an income-yielding asset like a house, a company share, or a government promissory note. But such purchases only transfer assets from one person to another. They do not increase the total assets of the community and are therefore not of much economic significance. In economics, the term Investment is used to mean *an addition to the existing stock of real assets*. Such addition takes place when a new machine or factory or office building is constructed or there is an increase in the amount of inventories.

Effect of Saving. An individual can increase his savings only by reducing his expenditure (assuming income to be constant). Reduction of expenditure involves reduction in the volume of purchases and necessarily leads to a reduction in the income of the producers of goods and services. One man's expenditure is another man's income. So, reduction of expenditure, other things remaining the same, always results in a fall in the level of income.

Less expenditure and reduced incomes generally lead to a fall in the price level. If E is the total money income or the earnings of the community in a unit of time and S the volume of savings then $E-S$ is the amount spent in consumption. Suppose that R is the volume of consumption goods and P is the price level of consumption goods. Then $E-S=P \times R$. *Other things remaining the same, increase of S will cause a fall of P and decrease of S will cause a rise of P .*

Effect of Investment. While increase of saving decreases income, *increase of investment always increases income.* Suppose that the moneys saved by the individual savers are borrowed by entrepreneurs and invested in new capital assets. Such investments involve the employment of workers and the purchase of various raw materials and accessories. Therefore, increase of investment increases the income of a number of persons and their spending power. If the positive savings of individuals are wholly utilised in new investments, the volume of expenditure and the level of income will remain unchanged and there will be no fall of prices. But if investment is less than the total amount of positive savings, the volume of expenditure and the level of income will fall, effective demand will be reduced and prices will move downwards. This is what happens during depressions. Conversely, if investment exceeds positive savings the level of income and effective demand will increase. This will not lead to any rise of prices so long as the output of goods (current consumption goods and durable goods) increases proportionately. But if output does not increase proportionately, increase of investment increases only money income without increasing income earning activity and causes a rise of prices.

Increase of output is possible only if in the country there are unemployed resources with which further production can be made. When all the available resources are fully employed, further increase of income, brought about (say) by expanding the volume of money, will produce an upward trend in the price level.

Conclusion. Thus according to the Savings-Investment theory, the level of income and the level of prices are both determined by the volume of positive savings and the volume of investments in the community. The volume of positive savings depends on the propensity to save. But the propensity to save is determined by customary

practices and habits which do not change much in the short run. So, of the two factors savings and investment, the latter is more important in the determination of the level of income and the level of prices.

Some Implications of the Savings-Investment Theory. The Savings-Investment Theory is considered to be superior to the Quantity Theory because it gives a satisfactory explanation of certain aspects of monetary behaviour which cannot be explained by the Quantity Theory. As examples, the following may be cited :

(i) It gives a satisfactory explanation of the price-changes that occur during the downswing and the upswing of a trade cycle.

(ii) It explains why booms can be controlled by restricting the supply of money but recovery from a depression cannot be started merely by increasing the supply of money. Entrepreneurs do not borrow money unless sound investment opportunities come into existence. It is investment that increases employment and income, not the quantity of money.

This statement requires a qualification. Increase in the quantity of money may increase investment opportunities if increase of money leads to a fall in the rate of interest.

(iii) The Savings-Investment theory explains why the velocity of circulation of money changes. An excess of intended savings over investment means accumulation of money in idle hoards. Money is being used with less frequency, *i.e.*, the velocity of circulation has fallen. In the converse cases the velocity of circulation will rise. Thus the velocity of circulation depends upon the relationship between intended savings and investment.

(iv) The Savings-Investment analysis gives a rational explanation of the effects of an increase in the supply of money on the price level and upon economic activity.

EQUALITY OF SAVINGS AND INVESTMENTS

The term saving has been used in the above discussion in a restricted sense to mean the positive savings of individuals. This may also be called "Intended Savings". But saving (in this sense) of some individuals, will be always associated with dis-saving of other individuals. When one person saves, he spends less, and some other person or persons find their income reduced. The latter group must reduce their savings or spend from previous savings. Thus *the total volume of savings is not equal to the sum of the positive savings of individuals.*

From the standpoint of the community as a whole, saving should be defined in a wider sense to mean whatever the community as a whole does not spend on current consumption goods. When used in

this wider sense, *savings must equal investment*. This proposition can be proved as follows :

- Income is spent on consumption and saving.
- ∴ Total Income = Consumption + Saving.
- But total income is earned by producing consumption goods and investment goods.
- ∴ Total Income = Consumption + Investment.
- ∴ Consumption + Saving = Consumption + Investment.
- ∴ Saving = Investment.

Inequality between Intended Saving and Investment. Disequilibrium between saving and investment can arise only if the term saving is used to mean the voluntary positive savings of individuals or what has been called 'intended savings'. *Intended savings may be less than the expenditure on new capital assets*. When people save, they buy less and producers and other individual suffer loss. These losses amount to negative saving. As Crowther puts it, "if the total of the positive savings that the public makes is greater than the volume of Investment, then the differences between the two represents the losses made by the business community, or the 'negative saving' forced upon the community by the fact of depression." Keynes used an illustration which makes the point clearer. When producers suffer loss they sell securities from their reserve and thereby a part of the positive savings is absorbed without there being any investment in the sense of constructing new capital assets. The term saving, if it is used in the wide sense, should include the induced losses and profits which are forced upon the producers, traders and citizens by voluntary positive savings. When the term is so used, savings must equal investment. But intended savings may be larger or smaller than investment at a particular time. When such a discrepancy occurs, the price level changes. When there is equality between intended savings and investment, the economic system is in equilibrium and there is stability of prices and employment.

THE EFFECTS OF INCREASED MONEY SUPPLY ON THE PRICE LEVEL

The traditional view regarding the relationship between money, prices and interest is expressed by Taussig as, "More money makes higher prices, not lower interest". This view follows from the Quantity Theory of Money and the Marginal Productivity Theory of Interest.

Keynes, in his 'General Theory', accepts the traditional view that increase in the quantity of money is generally associated with increase in the price level. But he differs from it as regards the causal process by which the rise of prices is brought about.

According to Keynes, the initial effect of increased money supply is to lower interest rates. This happens because people now have more money than they desire to hold and consequently the supply of loanable funds increases. When the rate of interest falls, investment increases. Increase of investment causes increase in employment. Increase in employment leads to higher prices for the following reasons : (i) labour costs increase because there is more demand for labour and the bargaining power of labourers automatically increases, (ii) in the short run the law of diminishing returns generally operates, and (iii) various types of bottlenecks arise because the supply of all factors of production are not equally elastic.

Although employment and prices both rise as a result of increased money supply the emphasis at first is solely on increase of employment. Later on, as the point of full employment is approached, the emphasis shifts more and more to rise of prices. After full employment is achieved, no further increase of employment is possible. Increase of money beyond this point spends itself entirely in raising prices. It has therefore been said that the Quantity Theory holds good in times of inflation. "The Quantity Theory of Money comes into its own during periods of full employment."

The revised version of the Quantity Theory according to Keynes, may be stated as follows : "So long as there is unemployment, *employment* will change in the same proportion as the quantity of money ; and when there is full employment, *prices* will change in the same proportion as the quantity of money." This view is based upon the following assumptions :

(i) During unemployment (or, under a less than full employment equilibrium) the supply of productive factors is perfectly elastic.

(ii) Under full employment the supply of productive factors is perfectly inelastic.

(iii) Increase in effective demand is proportional to the increase in the quantity of money.

Prices of particular commodities depend on the costs of production which vary with changes in the volume of output. Changes in the quantity of money do not affect these costs directly. But these costs are affected indirectly through changes in the rate of interest, investments, employment and income.

When prices and output increase, more money is required for transactions and this leads to increase in the supply of money. Thus increases in the price level (and also increases in the volume of output) lead to the creation of more money. The sequence of events is not, more money—higher prices, but higher prices—more money. The process is the exact reverse of what is contemplated under the traditional Quantity Theory.

MONETARY INSTABILITY

The value of money rarely, remains stable. The price level, which shows the value of money, moves up and down according to a cyclical pattern. In all capitalistic economies we find alternating period of inflation and deflation.

The causes of monetary instability, or why value of money fluctuate, can be analysed either in terms of the Quantity Theory or in terms of the more modern Savings-Investment Theory.

According to the Quantity Theory, changes in the value of money are due to the operation of any one or more of the following factors :

- (i) Changes in the quantity of money (legal tender money and/or credit money) ;
- (ii) changes in the output of goods and services ; and
- (iii) changes in the velocity of circulation.

The factors mentioned above are all included in the Quantity Equation, $PT = MV + M^1V^1$. The price level P changes if there is any change in M , M^1 , V , V^1 or T . The Quantity Theorists believe that in the short run V , V^1 and T remain fairly constant and therefore P varies mostly according to changes in M and M^1 .

The Quantity Theory does not provide an adequate explanation of monetary instability. During depressions we find falling prices together with unwanted stocks of money in the banks. During booms, rising prices co-exist with a tight money market.

It is nowadays believed that the Savings-Investment Theory provides a better explanation of monetary instability. According to the theory, changes in the value of money are caused by changes in the level of income ; and changes in the income-level are caused by changes in the volume of savings and the volume of investments in the community. [See above.]

Methods of Securing Monetary Stability. Monetary stability is generally considered desirable. The methods which are usually adopted for securing this objective are (i) control over the rate of interest and (ii) control over bank credit.

The Central Banks possess various weapons through which the market rate of interest can be raised or lowered according to requirements. During times of boom it is necessary to raise the rate of interest, so that inflationary tendencies can be checked. During depressions, the rate of interest should be lowered so that new investments are facilitated. [See next chapter, under Cheap Money Policy and Monetary Policy.]

Control over bank credit is an important duty of the Central Banks. In modern economies, a large part of the money-supply consists of bank money. Over-issue of such money creates inflationary trends. The converse of it, less than adequate credit, produces depres-

sion. The Central Bank can prevent either of these situations by various methods, e.g., variation of the bank rate, open market operations etc. [See, "Anti-inflation Measures", p. 421.]

INFLATION

Earlier Theories of Inflation. The word "inflation" literally means increase of volume or quantity. When credit-money expands it is called credit-inflation. In a similar way increase of costs may be called cost-inflation and increase of prices price-inflation.

By common usage the term "inflation", used by itself, is held to mean : *rise of prices brought about by increase in the quantity of money*. A mere increase in the volume of money (without any increase in the price level) is not called inflation. Again, a rise in the price-level (without increase of money supply) is not called inflation. The price-level may rise due to the operation of non-monetary causes like diminishing returns, increasing monopoly power etc.

Earlier writers used to define inflation in terms of the Quantity Theory of Money. Thus, according to Kemmerer, inflation occurs whenever the volume of the medium of circulation (legal tender money plus chequeable deposits) increases relatively to the demand for such media in such a way that the price level rises. In terms of Fisher's equation inflation occurs when $(M+M^1)$ increases more than T , and as a consequence P increases.

Sometimes it may so happen that costs are falling but prices are kept stable (by expansion of money or otherwise). Keynes calls this situation Profit-inflation.

The Current Theory of Inflation. Nowadays, inflation is analysed in terms of the *aggregate income and expenditure* in the community in relation to the available output of goods and services. When money supply increases, disposable income (i.e., personal income minus direct taxes) increases. *The increased income leads to increased spending which gives an upward thrust on prices*. If the increase in the money income is accompanied with a proportionate increase in the supply of goods and services, the price level will not rise. But if there is a gap between the increased income and the available output (at pre-inflation prices) the price-level will rise. This is inflation. Therefore, we can say that, *"the root cause of inflation (and deflation) is a change in total money-spending relative to the flow of goods offered for sale"*.

Pigou defined inflation as a situation where *"money income is expanding more than in proportion to income-earning activity"*. If the total money income of the community increases owing to greater employment, the demand for goods and services automatically increases. So long as the output of goods and services increases in

proportion, there will be no effect on prices. But as soon as the scope for income-earning activity is over (e.g., due to lack of resources) an increase in the supply of money will produce increased incomes without increasing the supply of goods and services. This will lead to rise of prices.

According to Keynes an increase in the quantity of money will have no effect whatever on prices so long as there are unemployed resources. Under such circumstances, increased money supply will increase effective demand and will lead to a greater employment of resources. Output will increase along with income and prices will not rise. But after full employment is reached, increase of money will not increase output. Effective demand will increase but will spend itself in raising prices. So long as there is unemployment, employment will increase with increased money supply. When there is full employment, prices will increase with increased money supply. So inflation begins when full employment ends.

The Inflationary Gap. The Inflationary Gap is a concept invented by Keynes to show the nature of the forces that cause an inflationary rise to prices.

Suppose that in a certain community the value of the total output during a certain year, calculated at the prices ruling in that year, is Rs. 800 crores. Suppose that from this output the government takes Rs. 100 crores for its requirements, leaving Rs. 700 crores for private consumptions. If the net total money-income of the people is Rs. 700 crores, the income is equal to the value of output at base prices. There is no inflationary pressure and the price-level remains stable.

Suppose that into such an economy the government introduces new money amounting to Rs. 300 crores. The money income of the people now amounts to Rs. $(700+300)=$ Rs. 1000 crores. A part of this income will be taken away by the government by way of taxes and a part of the income will be saved. Suppose that taxes amount to Rs. 50 crores and savings amount to Rs. 100 crores. The net money-income now available for expenditure is Rs. $(1000-50-100)=$ Rs. 850 crores. This represents an increase over the previously available income by Rs. $(850-700)=$ Rs. 150 crores. *This is the inflationary gap.* The extra income will exert an upward thrust on prices. If there is no increase of output the price level will rise to the extent necessary to equalise the current income with the value of the available output. The value of output will rise to Rs. 850 crores. From this example it can be concluded that the Inflationary Gap measures, "the excess of anticipated expenditure over available output at base (i.e., pre-inflation) prices".⁷

⁷Kurihara, *Monetary Theory and Public Policy*.

The inflationary gap can be narrowed in two ways : (i) by reducing money incomes and (ii) by increasing output. (*See post*).

Types of Inflation—

1. **Wage-induced and deficit-induced.** Pigou distinguished between two types of inflation, (i) wage-induced and (ii) deficit-induced. Money wages tend to rise whenever prices rise. Increase of money wages increases cost of production without increasing output and causes prices to rise still further. This is wage-induced inflation. Deficit-induced inflation occurs whenever Governments, unable to finance their expenditure by taxation, resort to the printing press to create money.

2. **Open or Suppressed.** Inflation may be Open or Suppressed. When the Government makes no attempt to control prices, there is said to be Open Inflation. When prices are controlled by fixation of price-ceilings, rationing or otherwise, there is said to be Suppressed (or Repressed) Inflation. During suppressed inflation, private holdings of cash and bank balances increase. Prices cannot rise in the controlled sector but rise disproportionately in the uncontrolled sector.

3. **Demand Pull and Cost Push.** When the upward thrust on prices comes from increasing income and higher effective demand we have what is called Demand Pull Inflation. Such inflation occurs beyond the level of full employment.

Under certain circumstances there may be inflation *even though there is unemployment*. The typical case is where wages rise (irrespective of the unemployment situation) at a rate higher than the increase in labour productivity. Suppose that wages are rising (by collective bargaining or otherwise) at 3% per annum, while labour productivity is increasing by 2% per annum. The price level will in such a case increase by about 1% per annum. This is called Cost Push Inflation.

4. **Sellers' Inflation.** Rising prices, due to wage-push and cost-push, have been called Sellers' Inflation.

5. **Stagflation.** Recently a new phenomenon is occurring in which there is stagnation together with inflation. The stagnation happens in certain sectors of the economy for the following causes : (i) shortage and irregular supplies of raw materials and components (ii) shortage and unstable supplies of power (iii) labour troubles (iv) insufficient demand (v) obstacles to growth etc. The factors listed above causes stagnation of the economy but at the same time there is unemployment and inflation. The phenomenon has been called 'stagflation'. It is occurring in U.S.A. and India. Samuelson⁸

⁸ *Economics*, p. 825

states that, "the new problem of cost-push inflation throws up perplexing dilemmas of 'stagflation'—unemployment and inflation at the same time."

6. **Hyper-inflation.** An inflation may be mild or severe. The degree of inflation is shown by the extent of the rise of prices. A severe inflation may be called Hyper-inflation. When inflation proceeds at a rapid rate it is called Galloping Inflation.

Causes of Inflation. Inflation occurs when money incomes increase at a greater rate than the output of goods and services. Hence, the factors that cause inflation may be grouped under the following heads :

1. *Factors which cause increase of money incomes :* These are (a) increase of money-supply, (b) increase in the amount of disposable income by greater Government expenditure, increase in wage-rates, or otherwise, (c) expansion of bank credit, (d) increased expenditure by consumers and business enterprises, and (e) larger purchases of goods by foreigners. All the factors, mentioned above, increase the demand for goods and services and thereby tend to raise the price-level.

2. *Factors which affect output :* The output of goods and services cannot increase in proportion to the increase of money incomes if there is a shortage of raw materials, equipment or labour. So long as there are unemployed resources in the economy, increase of money incomes will increase output and there will be no increase in the general price-level. After full employment is reached, output cannot be increased and, if money incomes continue to increase, there will be inflation. In under-developed economies there may be bottlenecks preventing increase of output, like shortage of technical personnel or of capital goods. In such countries, inflation may occur even though there exists a large volume of unemployed labour. In mature economies there may be a Cost Push type of inflation in which prices creep upwards while unemployment persists.

3. *The Role of Expectations :* Inflationary pressures are very often accentuated by expectations regarding future movements of prices and wages. When prices are expected to rise, people buy more consumer goods and equipment thereby increasing the prices of these goods. An expectation of wage-increase may induce manufacturers to put up prices in advance. During periods of rising prices, more speculative activity takes place in the produce markets and the stock exchanges. Such speculation pushes prices up and thereby aggravates the inflationary situation.

4. *Causes of Cost Push Inflation :* The following suggestions have been given for cost-push inflation. (i) Trade unions always push upwards on wages with a uniform pressure. (ii) The power of unions is increasing, thereby reducing the work period, and the work intensity.

(iii) The cost of living is increasing thereby creating a cost push spiral.
 (iv) Business profits are increasing. (v) The level of business activity is expanding.

5. *Causes of Demand-Pull Inflation* : The following suggestion has been given for demand pull inflation. The fluctuations in the level of demand for both consumer goods and capital goods are the causal forces operating on prices and factor costs. Demand goes up, prices are bid up and production become more profitable. Therefore demand for factors of production and their prices are bid up. Variations in wage rates are naturally associated with variations in the level of excess demand.

DEFLATION, DISINFLATION AND REFLATION

Deflation is the opposite of inflation. It describes a situation where prices are falling as a result of decrease in money-supply or money-incomes more than in proportion to the output of goods and services.

Disinflation is a term used to denote the process of curing inflation by reducing money-supply.

Reflation is a cure for deflation. It means increasing the money supply to the extent necessary to remedy the evils of a disproportionately small money-supply.

EFFECTS OF CHANGES IN THE PRICE-LEVEL

Changes in the Price-level and the Value of Money affect different sections of the community in different ways. Some people gain while other people lose. A particular individual may occupy more than one position in the community. When price changes occur he may gain in one capacity and loses in another.

An upward change in the price-level is generally associated with inflation and a downward change with deflation. The consequences of price-changes may be analysed under these two headings.

Effects of Inflation—

1. *Debtors and Creditors* : Debts are fixed in terms of money. If a person borrows money before prices rise and repays later, he pays back the same quantity of money but less purchasing power. Therefore rising prices confer a benefit on debtors and cause loss to creditors.

2. *The Rentier Class* : Pensioners, annuity-holders, owners of Government promissory notes and others who get a *fixed* income in terms of money are called Rentiers. This class loses when the price-level rises because the purchasing power of their income becomes less.

3. *Production* : Inflation generally has a good effect on production and trade. Producers and businessmen make their purchases before sale. If, in the meantime, prices rise they make a gain. Usually prices rise faster than costs. A larger part of costs (prices of raw materials, rent of buildings etc.) are fixed by long term contracts and do not rise in proportion to the rise in the general price-level. Wages generally lag behind prices. ("Wages are sticky"—Keynes). For all these reasons, business and production receive a great impetus during rising prices and tend to expand. This tendency, however, is a short-run phenomenon. In the long run costs rise and become adjusted to prices, so that the incentives to higher production and greater trade are lost.

4. *The Working Class* : Wages, being fixed by contract, do not rise simultaneously with prices. The working classes find the purchasing power of their incomes falling during rising prices. This causes distress. In modern times wage-earners do not remain passive under these circumstances. Through trade-unions and other agencies they bargain for higher wages and usually get some raise. It is generally found, however, that wages do not rise in the same proportion as prices. Therefore, inflation is harmful to the working class. But during inflation, business and production expands, the demand for labour is high and employment is maintained at a high level.

5. *Distribution and Social Consequences* : Inflation is always harmful to society. During rising prices, the poorer sections suffer distress. Wage-earners try to increase their incomes by agitation and labour-disputes occur. As businessmen and manufacturers make higher profits, inequality of wealth increases.

When inflation starts it tends to grow cumulatively. Rising prices lead to rising costs and a further rise in price. This is known as the *Inflationary Spiral*. During the later stages of inflation prices rise by leaps and bounds, the value of money tends to fall towards zero, public confidence in money collapses and a chaotic condition prevails. Extreme inflations of this type occurred in Germany and Austria after World War I and in China before the revolution.

Inflation operates inequitably because the poorer classes suffer much more than the richer classes. Inflation is unfair as between different groups of income-earners. People with variable incomes, businessmen and industrialists, gain during inflation; people whose incomes are more or less fixed lose. Therefore, inflation causes an unjustifiable transfer of wealth from some sections of the people to others, which is highly inequitable.

6. *Inflation is a form of Taxation* : Inflation may be regarded as a method of reducing the consumption of the public by increasing prices. When prices rise private consumption is reduced. Also, the purchasing power of money in the hands of the public becomes less.

The resources set free by these processes can be obtained by the Government with the notes printed by it or by credit obtained from the central bank. Inflation, therefore, is a method of transferring resources from the public to the Government. It is a form of taxation. But this 'tax' is not based on the ability of the taxpayer. Nor does it satisfy any of the accepted canons of taxation. Therefore, it is an unjust form of taxation.

Effects of Suppressed Inflation. Inflation can be suppressed by price-control and rationing. This can be done as regards the essential commodities. Price-control and rationing of all goods and services in the community is impossible. Suppressed inflation produces the following effects :

- (i) Prices in the uncontrolled sector rise disproportionately high.
- (ii) Price-control and rationing prevents expenditure on goods wanted by the people and therefore, reduces the incentives to work.
- (iii) The pattern of consumer expenditure is disturbed because there arises a tendency to spend more on uncontrolled goods.
- (iv) Black-markets generally come into existence.
- (v) A considerable amount of manpower is kept blocked in administering the controls.

Advantage of Inflation. The only advantage of inflation is that it provides as *easy method of financing* government expenditure in times of trouble. "The political argument in favour of inflation is almost overwhelming," says J. M. Keynes. "No one has to take the responsibility for inflation, not even the Chancellor of Exchequer It will just happen.... It greatly benefits some important interests. It oils the wheels everywhere, and a regime of rising wages and profits spreads an illusion of prosperity."

Effects of Deflation—

1. *Debtors and Creditors* : During falling prices debtors lose because when repaying the same amount as borrowed they pay more purchasing power. The creditors naturally gain.

2. *The Rentier Classes* : People with fixed money-incomes gain during falling prices because the purchasing power of their income increases.

3. *Production* : Deflation has a very bad effect on production and trade. Falling prices may wipe out the differences between prices and costs, which constitutes the profit of manufacturers and businessmen. To avoid possible loss, producers and traders reduce their activities during falling prices.

4. *The Working Class* : The purchasing power of wages increases during deflation. Employed workers find their economic conditions improved during such times. But during deflation, trade

and production contracts and many workers lose their jobs. *The principal evil of deflation is unemployment.*

5. *Social Consequences*: Deflation has a very bad effect on the community. During such times business and industry suffer losses and tend to contract. Employment is reduced and incomes fall. The effects grow cumulatively and ultimately the community reaches a stagnant state recovery from which takes a long time.

Conclusion. We can conclude that inflation and deflation are both bad for society. Government policy should always aim at a steady price-level. Some economists are, however, of opinion that for the development and expansion of production and trade slowly rising prices are better than absolutely stable prices.

ANTI-INFLATION MEASURES

It is very difficult to break the vicious circle of rising prices and rising costs, once the process of inflation gets started. Anti-Inflationary measures must aim at one or both the following objectives: (i) *reduction of money incomes* and (ii) *increase in the output of goods and services*. Many methods of securing these objectives have been tried. These methods can be grouped under three heads: (i) monetary measures, (ii) fiscal measures and (iii) other measures.

I. Monetary Measures. Reduction of money-supply will automatically reduce money-incomes and relieve the pressure on prices. The following measures may be adopted to secure this objective:

(i) *The volume of legal tender money may be reduced by withdrawing a part of the note-issue.* This is usually impracticable because the government requires more money during inflationary times and cannot afford to give up any purchasing power. What is usually done is to avoid increasing the quantity of additional issues.

(ii) *The volume of credit-money may be reduced* by suitable action on the part of the Central Bank. Various weapons are available to the Central Bank for this purpose, viz., raising the bank rate, open market operations, raising the reserve ratio, selective control of credit etc.

(iii) There may be *freezing or blocking of particular types of assets, i.e.,* the owners of certain funds may be directed not to use the money for the purchase of goods and services.

(iv) *Overvaluation of the foreign exchange rate* may afford some relief by reducing the foreign demand for goods.

(v) Sometimes the fall in the value of the currency unit is so great that public confidence in it is entirely lost. The only remedy in such cases is to *start afresh with a new currency unit*. After World War I inflation in Germany reached such colossal proportions that its currency, the Mark, had to be abandoned.

II. Fiscal Measures. The principal fiscal measures of an anti-inflationary character are the following :

(i) *Reduction of Government expenditure.* A considerable part of the money-income of the public comes directly from government-spending. Reduction of such spending reduces the inflationary pressure.

(ii) *Raising the rates of taxation* and the imposition of *new taxes* will reduce private spending.

(iii) Provision may be made for the *compulsory deposit* (with the government) of certain types of income, e.g., excess profits.

(iv) The government can withdraw money from the public by *raising loans*.

III. Other Measures. There are various non-monetary and non-fiscal measures which may help in curbing inflation. They are as follows :

(i) *Increased production of goods* : An increase in the flow of consumer goods is logically the best remedy of inflation. During war time the major part of the country's productive power has to be concentrated on goods required for war purposes but in times of peace, increased production is possible, provided the necessary technical personnel and capital goods are available.

(ii) *Wage-Freeze* : Higher wages lead to higher costs and higher prices. Hence, to check inflation there must be control over wages.

(iii) *Control over Speculation* : Speculation in the stock-exchange and the produce markets raise prices unnecessarily. Steps may be taken to control speculation by raising the margin requirements for loans against shares, prohibition of futures trading etc.

(iv) *Price-control and Rationing* : Fixation of ceiling prices and controlled distribution of essential goods keep the prices of such goods at relatively low levels. It is, however, very difficult to administer such control measures efficiently.

World wide inflation. During 1973-74 inflation has become a world wide plague. Rising prices occurred not only in advanced capitalistic country, e.g., U.S.A. but also in socialistic countries like Sweden and India and also in communist states e.g., Yugoslavia.

The experts on the subjects have suggested the following steps to cure the disease :

(1) All the countries should join to expand world food production. Certain areas have vast food growing potential.

(2) There should be a world commodities union in order to stop international bidding for raw materials and food products.

(3) Trade practices should be reformed e.g., discriminatory taxes, imports quotas, regulations on product size etc. with purpose of reducing living cost.

The efficacy of anti-inflation measures. Monetary and Fiscal measures alone are generally not sufficient to remedy inflation. Non-monetary measures (e.g., increasing production) are also necessary.

The efficacy of anti-inflation measures depends on the extent of their application and the strength of the forces bringing about inflation. U.S. and British experience during the war and post-war years seems to show that a *mild* inflationary tendency (as also a *mild* recession) can be cured by appropriate monetary and fiscal measures. But *galloping inflations* cannot be cured by such measures alone. (Example: Germany after World War I, China just before the communist revolution). India has adopted a few anti-inflationary measures but has not been able to control inflation.

Another point to be noted is that a Demand Pull inflation can be checked by monetary and fiscal measures but a Cost Push inflation cannot be checked by such measures alone.

RECOMMENDED READINGS

1. Keynes, *General Theory*, Ch. 21.
2. A. C. L. Day, *Outline of Monetary Economics*, Chs. 18-21.
3. Kurihara, *Monetary Theory and Public Policy*, Chs. 1 to 5.
4. Benham, *Economics*, Ch. XXXIII.
5. Cairncross, *Introduction to Economics*, Chs. 26-28.
6. Samuelson, *Economics*. (9th edition), Ch. 13, 15, 41.

EXERCISES

1. How are Index numbers of prices constructed? What are their difficulties? (See C.A. Final Nov. '72).
2. How can we measure changes in the value of money? Point out the difficulties of such measurement. (C.U. B.Com. '68, '70; B.A. '69, '73).
3. Explain the meaning of 'demand for money' and 'supply of money' in the context of the Quantity Theory of Money. (C.U. B.Com. '62; Mysore '68).
4. Distinguish between the different motives for holding money. Which of these motives gives rise to the phenomenon of "hoarding" money. (C.U. B.A. '60; '69).
5. Analyse the causes which determine the velocity of circulation of money.
6. Discuss the Quantity Theory of Money. (Gau. B.A. '63, '65; compare C.A. May '65, Nov. '70).
7. Discuss the cash transactions approach to the Quantity Theory of Money. (C.A. Nov. '71).
8. "The Quantity Theory of Money comes into its own during periods of full employment." Discuss this statement. (C.U. B.Com. '65, '73; B.A. '60, '71).
9. What do you mean by the value of money? Why does the value of money fluctuate? (C.U. B.Com. '69).
10. Discuss the view the price changes are better explained by the Savings and Investment Theory than by the Traditional Quantity Theory.
11. Discuss the relationship between the general price level and the quantity of money. (C.U. B.Com. '71).

12. Distinguish between the demand-pull and cost-push types of inflation (C.U. B.A. '68, '71, '73).
13. Define 'Inflation', and describe its economic effects. (Mysore, B.Com. '68; C.U. B.Com. '70).
14. Explain the terms, suppressed inflation and open inflation. How would you cure an open inflation? (C.U. B.Com. '64; B.A. '66, '69, '72).
15. What measures would you advocate for the control of inflation in a country. (C.U. B.A. '68; C.U. B.Com. '73).
16. Distinguish between inflation and deflation. Analyse the economic effects of inflation. (C.U. B.Com. '72).
17. Explain the causes of inflation and discuss its remedies. (C.A. Final Nov. '73).
18. Discuss the economic effects of inflation. Would the effects be the same for a 'demand pull' inflation and a 'cost push' inflation? (C.U. B.Com. '74).
19. Examine the effects of changes in the quantity of money on price level and income. (C.U. B.A. '74).
20. What is inflationary gap? Explain how it can be eliminated. (C.U. B.A. '74).

CHAPTER 28

MONETARY SYSTEMS & MONETARY POLICY

DEFINITION AND CLASSIFICATION

The term Monetary System is used to denote the manner in which money is issued in a country, and the mechanism through which its value is regulated. The term Monetary Standard is sometimes used in the same sense.

Broadly speaking there are three possible Monetary Systems :

(i) Monometallism (ii) Bimetallism (iii) Managed Paper Money.

Under Monometallism, the legal tender money is *linked with a particular metal*, gold or silver. The money in use is either made of the chosen metal or is convertible into it. The value of the money in use depends upon the value of the metal. India from 1835 to 1893 had silver monometallism ; U.K. from the middle of the 18th century to 1914 had gold monometallism.

Under Bimetallism *two metals*, gold and silver, are used for coinage purposes and the value of money depends on both metals.

Under the managed paper standard, *money is made of paper* and its quantity and value are regulated by the State or the Central Bank. All countries now have adopted the managed paper standard. Monometallism or bimetallism does not exist anywhere.

BIMETALLISM

Features. There are four characteristic features of bimetallism ; (i) two types of coins are issued, one made of gold and another made of silver ; (ii) both coins are unlimited legal tender ; (iii) there is a fixed ratio of exchange between them ; and (iv) the mints accept gold and silver bullion from the public for conversion into coins without charge or with a small charge. A variant of bimetallism is the "Limping Standard", where only one metal is accepted from the public for coinage, the other features of bimetallism being retained.

France adopted bimetallism in 1803. Subsequently certain other European countries adopted it. There was a strong movement towards international bimetallism during the later years of the 19th century but the movement collapsed largely owing to the refusal of Great Britain to change her currency system which was based on gold monometallism.

Advantages claimed for Bimetallism. The advocates of Bimetallism used the following arguments in support of the system :

1. *Bimetallism makes prices stable.* Since two metals provide materials for coinage, the total of money is large and variations in the supply of one metal has less effect on the price level. This argument ignores the existence of credit money and assumes that money supply depends mainly on the supply of the metal chosen as standard.

2. International bimetallism is better than the international gold standard because under the latter there may arise a *shortage of the money material, viz., gold.*

3. International bimetallism automatically keeps the *rates of foreign exchange steady.*

Arguments against Bimetallism. The opponents of Bimetallism used the following arguments against the system :

1. Bimetallism is impracticable for a single country. *It is impossible for a single country to keep two metals in circulation.*

Suppose that the mint ratio between a gold coin and a silver coin of the same weight is 1 : 15. Suppose that for some reason the supply of silver increases and the market ratio between the values of the two metals becomes 1 : 16. Any individual with gold coins (weighing, say 1 oz.) can now melt them down, obtain 16 ozs. of silver from the market by exchange, keep 1 oz., put in the balance 15 ozs., in the mint, obtain silver coins and exchange them for gold coins. He will get (according to the official ratio) gold coins weighing 1 oz., which are what he started with. He makes a profit of 1 oz., silver. The process will continue until all gold coins are melted down. If the value of gold falls, the reverse process will occur and silver coins will be melted. Thus the metal which is overvalued in the mint will remain in circulation and the undervalued metal will disappear. This is in accordance with Gresham's Law. In practice, therefore, bimetallism will produce an "alternate standard". The coins will alternately be of gold or of silver, depending on which metal has a higher value in the mint than in the market. To avoid the melting of coins of the undervalued metal, Marshall suggested that there should be a single coin containing both gold and silver in a fixed proportion. This idea—known as Symmetallism—was not adopted anywhere.

2. Even if all countries adopted bimetallism simultaneously the operation of *Gresham's Law cannot be avoided.* International bimetallism can prevent export of the undervalued metal but cannot prevent the melting which will occur whenever the market value of one metal diverges from the mint value due to changes in the condition of demand and supply of that metal. Whenever such changes occur the money supply will be affected and there will be confusion in business and in the money market. The scope for speculative activity will be much greater.

3. The value of both gold and silver varies widely. Joined together they *may be more steady* than either alone. Fisher compared bimetallism to "two tipsy men locking arms". "Together they can walk somewhat more steadily than apart". But there are other and better ways of securing stability.

Conclusion. The bimetallic controversy is now a dead issue. All the advantages possible under bimetallism can be secured under a managed paper standard, which is also more economical. At the present moment it is impossible to conceive of remonetising silver.

GOLD STANDARD

Definition and Classification. The Gold Standard is a system under which *the legal tender money is either made of gold or is convertible into it at fixed rates*. Under a gold standard, the value of money *depends on and varies with the value of gold*. The connection between money and gold can be secured in four different ways. So there are four main types of gold standard.

I. *The Gold Currency Standard or the Pure Gold Standard* : This system existed prior to 1914 in U.K., U.S.A. and certain other countries. It had three features : (i) A coin made of gold was standard money and unlimited legal tender (ii) Metallic gold could be converted into coins by any member of the public without charge or at a nominal charge. This kept the connection between the value of the coin and the value of the metal. The same object could be secured by purchase and sale of gold at fixed rates by the Government or the Central Bank. (iii) Import and export of gold was allowed without restriction.

II. *The Gold Bullion Standard* : This system existed in U.K. from 1925 to 1931 and in India from 1927 to 1931. It had three characteristics. (i) There was no public coinage either free or with charge. (ii) The legal tender money consisted of paper notes and token coins and had a fixed value in terms of gold. (iii) The currency authorities undertook to buy and sell gold at fixed rates or supply gold at fixed rates for foreign payments. This kept the connection between the value of gold and the value of money.

III. *The Gold Exchange Standard* : This system was the same as the gold bullion standard except that the currency authorities did not purchase or sell gold but undertook to supply, for foreign payments, a foreign money based on gold, in unlimited quantities at rates previously fixed. The system existed in India from 1898 to 1913.

IV. *The Gold Reserve Standard* : This system operated in Western Europe (including U.K.) between 1936 and 1939. Under this system there was no gold coinage. The legal tender money consisted of paper notes and token coins. The external value of money, i.e., the rate of foreign exchange, was controlled by purchase and sale of

foreign exchange or gold from special reserves created for the purpose and known as "exchange equalisation funds". Movements of monetary gold took place, not between Central Banks, but between these funds. Each fund had a stock of its own currency and gold and could intervene either way (by purchasing or selling currency) when the exchange rate tended to fluctuate. The interventions were usually secret. The object was to keep rate of exchange fixed.

How the Gold Standard Worked—

Connection between money and gold. Under gold standard there was a direct connection between money and gold. The value of money depended on the value of gold, and the quantity of money depended on the quantity of gold available for monetary purposes.

The money supply of a country is made up of two parts, legal tender money and credit money. Under gold standard the volume of legal tender money depended on the available supply of gold because the money in use was either made of gold or was convertible into it. The volume of credit money depended on the amount of gold reserves which again depended on the available supply of gold. The credit policy of the Central Banks occasionally varied the reserve ratios but generally speaking currency expansion occurred when gold supply increased and currency reduction occurred when gold supply decreased.

Distribution of gold. Under gold standard the available supply of gold was distributed among the different countries through international trade payments. A country with an unfavourable balance of payments exported gold to settle the balance. Money supply in it became automatically less and the price level fell. In the gold importing country money supply increased and prices rose. Lower prices in the gold exporting country in course of time, increased its exports and reduced its imports. In the gold importing country the reverse process occurred. The import of gold increased money supply and raised the price-level. Higher prices reduced exports and increased imports. In course of time exports and imports balanced in both countries although the level of internal prices in both were altered. Any change in the price level of any country disturbed the balance of trade and caused fresh gold movements, setting in motion forces which again altered price levels but ultimately produced balanced trade in all countries. But the rates of foreign exchange, being determined by the gold contents of the legal tender money, did not vary beyond the small limits set by the specie points. Thus, under gold standard through gold movements, international trade was balanced, the price levels of all countries were connected with one another and stability in the rates of foreign exchange was secured.

Conditions. The gold standard can operate only when two conditions are fulfilled. (i) no obstacles are placed on international

movements of gold and (ii) the effects of gold movements on the price level are not offset by any action on the part of the Government or the Central Bank. These conditions are known as "*the rules of the (gold standard) game*". If gold movements are obstructed the balance of payments cannot be adjusted. If gold movements are not allowed to affect the price level (*e.g.*, if the Central Bank takes possession of all gold imports and immobilises them in its vaults) the connection between the price levels of different countries ceases to exist and international trade remains in a state of permanent disequilibrium. During the latter part of the 19th century the gold standard operated with fair success in Western Europe and U.S.A. because generally speaking the Central Banks of these countries observed the "rules of the game".

Merits of the Gold Standard. At one time it was thought that the International Gold Standard (all countries under gold standard) was the best form of monetary system. The following arguments can be used in support of the international gold standard :

1. Under the gold standard the volume of money depends on the supply of gold. *The currency system cannot be tampered with by interested politicians.* Deliberate inflation is not possible under the gold standard.

2. Under gold standard *the price level and the rates of foreign exchange are determined automatically.*

3. *The rate of foreign exchange remains stable.*

4. The gold standard provides a common medium for international payments and thereby facilitates international trade.

5. Under an international gold standard *the balance of payment is automatically adjusted.* Government interference, by exchange-control or otherwise, is not necessary.

6. *People like gold :* A gold standard inspires public confidence and confers prestige on the country having it.

Criticisms of the Gold Standard. The following arguments can be used against the gold standard :

1. The gold standard as it operated in the past was *not automatic*. The so-called rules of the game were never strictly followed. A country with an adverse balance of trade always put obstacles to the outflow of gold (for example, by raising the bank rate). Towards the later stages, the gold standard became a completely managed standard. During 1936-39 the Central Banks, through exchange equalisation funds and other contrivances controlled the monetary system, though in theory, gold was the standard of value.

2. *The gold standard did not secure stable prices or stable exchange rates.* The Californian gold discoveries in the third quarter of the last century raised the price level considerably, while in the last

quarter of that century prices fell owing to the increased demand for gold for monetary and non-monetary uses.

3. The Gold standard was a *fair weather standard*. In times of panic gold withdrawals from the Central Bank forced the abandonment of the standard. This occurred in U.K. in 1914 and 1931.

4. Gold movements caused *fluctuations in the rates of interest* which were inconvenient for trade and industry.

5. In the international gold standard as it operated in later years primary attention was given to *exchange stability*. This was secured at the cost of *internal stability of prices and incomes*.

6. According to Keynes, *the gold standard causes deflation and unemployment* in countries with excess of imports over exports. Under such circumstances gold tends to flow out. To keep it in, the Central Bank raises the rates of interest, which reduces investment and employment. The domestic industries are forced to cut wages as a method of reducing costs and maintaining their competitive capacity.

7. The pure gold standard is *very costly*. Money is only an instrument used for exchange purposes. There is no reason why it should be made of gold. The other forms of gold standard are also costly as compared to the paper standard.

8. Under international gold standard the monetary policies of all countries were more or less connected. *No country could follow an independent policy* as regards her price level without abandoning the standard.

9. *The gold standard is unnecessary*. All the advantages claimed for it can be secured under a managed paper standard.

Breakdown of the Gold Standard. The outbreak of the 1st World War in 1914 brought about a situation in international trade and finance which made the continuance of the gold standard impossible and it was abandoned by most of the countries which had it. After the war ended there was a general movement to restore the gold standard because it was considered to be the best possible standard. In U.K. it was restored in 1925. But the post-war monetary situation was very different from what it was before the war and very soon difficulties were encountered. In U.K. in 1931 large scale gold withdrawals from the Bank of England began to occur and the gold reserves of the Bank of England soon fell to an alarmingly low level. U.K. thereupon abandoned the gold standard. This action was followed by other countries within a short time.

The causes of gold withdrawals in U.K. in 1931 were as follows :

(1) When U.K. restored the gold standard in 1925 she fixed the gold value of the Sterling at the pre-war rate of 1 oz. gold=£3. 17 sh. 10½d. As the Sterling had depreciated in value during the war, the new rate overvalued the Sterling and raised the export prices

of British goods. Internal costs could not be reduced owing to the strong opposition of trade unions to wage cuts. Therefore British exports fell, the balance of trade became adverse, and to pay for it, gold exports became necessary.

(2) The Wall Street (New York) panic of 1929 created nervousness in the money markets of the world. Foreign holders of funds in London began to withdraw them.

In former times London was the financial centre of the world and foreigners used to keep funds there, for short term investments. Some of these funds were extremely sensitive to economic changes and were withdrawn at the slightest sign of danger. These funds known as "Hot Money", were flowing out of London during the panic.

(3) Owing to the weakness of the Sterling, speculative transfer of Sterling to other currencies were taking place.

It is interesting to note that in 1949 there was an almost exact repetition of the situation of 1931. This time the Pound had to be devalued by about 30%.

The gold standard has now been abandoned in every country. The reasons why it has been abandoned can be summarised as follows :

1. The existing stock of gold is very unevenly distributed. Most of it went to U.S.A. after World War I via payments for war debts and reparations.

2. The relatively small stocks of gold in other countries have to be conserved for safety and security. So in 1931 when U.K. was faced with large scale withdrawals of gold she abandoned the gold standard.

3. The rules of the gold standard "game" were in the later stages, no longer observed. The huge quantity of gold, which flowed into U.S.A. after World War I, was hoarded by the monetary authorities in bank vaults. U.S. currency was not allowed to expand as required under the rules of the standard. There arose a disparity between the U.S. price level and the price levels of other countries which led to a further outflow of gold to U.S.A. So the other countries had to abandon the gold standard.

4. Growth of economic nationalism led to the formation of monetary policies suited to the economic circumstances of each country. No country was willing to allow export of gold or to damage her industries by following a deflationary policy simply to maintain or restore the gold standard.

5. The gold standard is no longer regarded as the best monetary system. Economists, like Keynes, have shown that a paper standard under good management produces better results.

The Present Position of Gold in Monetary Affairs. Can the Gold Standard be Restored? At present gold is not used for

coinage purposes anywhere. The purchasing power of money does not, in any country, depend on or vary with the value of gold. The quantity and the value of money in every country now is determined by monetary policy.

The International Monetary Fund, established in 1944 requires every country to fix the value of its legal tender money in terms of gold or U.S. dollars. But this valuation is only for fixing the rates of exchange between different currencies. It is not intended to base the monetary system on gold as it was under the international gold standard. (See Ch. 36).

Restoration of the gold standard of the pre-1914 type is impossible because (i) the existing gold stocks are mostly in U.S.A.; (ii) no country will surrender the authority to determine its own price policy; (iii) no country will allow free gold movement which is necessary for the operation of the gold standard.

MANAGED MONEY OR THE PAPER STANDARD

Definitions and Characteristics. Under the Paper Money system *the legal tender money consists of paper notes and token coins.* Gold is kept in the Central Bank to instil confidence in the money and for reasons of security. The money in use has an official value in terms of gold but *its purchasing power does not depend on gold.* The monetary authorities control the volume of money and its internal purchasing power. The rate of foreign exchange is kept fixed by various contrivances (like exchange equalisation funds, purchase and sale of foreign exchange and exchange-control) but may be varied whenever necessary to correct unfavourable balance of payments. *Under a paper standard, monetary policy is a tool used for the furtherance of the country's economic policy.* The paper standard cannot operate automatically like the gold standard. Therefore, the paper standard is always a managed standard, the management being in the hands of the Government and the Central Bank.

In modern times almost all countries are on a paper standard of the type described above. Since 1944 an institution called the International Monetary Fund has been established to facilitate international payments and to secure international co-operation in monetary matters. The IMF has rules to prevent variation of the rates of foreign exchange beyond certain specified limits.

Advantages of Paper Money. The Managed Paper Standard is now in universal use. The advantages of the system are enumerated below :

1. *It is less costly than metallic money.* Using gold or silver for coinage purposes is wasteful. Paper notes have to be replaced frequently but even then it is less expensive than metallic coins.

2. Under a paper standard there is *no necessity of keeping a costly reserve* in the form of gold. Currency authorities usually keep some gold reserves but only for reasons of security.

3. Under a paper standard *monetary policy can be adjusted in accordance with the country's economic policy*. According to Keynes full employment can be secured only when the monetary regulations are elastic enough to permit the creation of new money to finance government expenditure.

Disadvantages of Paper Money. The possible evils of the managed paper standard are enumerated below :

1. There is *no protection against over-issue* and consequent inflation.

2. There is *danger of mismanagement*. If the governmental machinery is under the control of sectional interests it may be used in such a way as to favour particular sections of the community.

3. Under a paper standard the *rates of foreign exchange may fluctuate widely* and international trade may be affected. To avoid this, various methods of control over trade and exchange have been invented. But control reduces the gains from trade and may under certain circumstances be oppressive.

Signs of Over-issue. When paper money is used simultaneously with full weight metallic money, over-issue of paper money is always followed by a rise in the price of gold above the official rate. This is known as the "premium on gold". Under a system of inconvertible paper money, excessive issue of notes produces the following consequences : (i) rise in the price of gold, (ii) rise in the general price level and (iii) fall in the external value of the currency (*i.e.*, the rate of foreign exchange).

PRINCIPLES OF NOTE-ISSUE

The Banking Principles and the Currency Principle. In former times there were two schools of thought regarding note-issue. According to one school notes are merely substitutes of metallic money and therefore, for every note issued there must be kept an equivalent amount of metal in the reserves of the issuing authority. This is known as the *Currency Principle*. According to the other school, notes are required for use in trade and industry and remain in circulation. Conversion of notes into coin is demanded only if the amount issued is in excess of the amount required. What money (as reserve) is required to meet this demand should be left to the discretion of the issuing authority. Definite rules regarding reserve are quite unnecessary. This is known as the *Banking Principle*.

If notes are issued according to the currency principle they would be *quite safe* and would *enjoy the absolute confidence* of the public. But the system would be *too costly* because too much metal would be locked up in an unproductive manner. The monetary system *would be inelastic* because the volume of notes could not be increased and decreased according to necessity. The money supply would depend entirely on the supply of the metal chosen as the standard. The volume of money would generally be less than what is required for the full employment of resources.

If notes are issued according to the banking principle the monetary system would be *cheap and elastic*, but *would be unsafe*. The people would not have confidence in the system and there would be a flight from currency at the slightest sign of trouble. Experience shows that the normal tendency of every issuing authority is to issue in excess, unless checked by rules.

Classification of Note-issue System. In actual practice every country has adopted some method of controlling note-issues, but none has gone so far as to insist on a hundred per cent reserve as required under the currency principle. Note-issue systems can be divided into the following classes according to their reserve requirement.

1. **The Fixed Fiduciary System.** Under the system a certain quantity of notes can be issued *without any reserve*. This amount is called the *fiduciary limit*. Beyond the *fiduciary limit there must be a hundred per cent reserve*. This system was adopted for the Bank of England by the Bank Charter Act of 1844 and was followed in many other countries. The fiduciary limit was raised from time to time as industry and trade expanded. The fixed fiduciary system (as it operated in U.K.) enjoyed public confidence but was uneconomical because it locked up a large amount of gold unnecessarily. It also made the note-issue system inelastic. On several occasions in U.K. the Bank Charter Act had to be suspended in order to allow the Bank of England to issue notes without any reserve. This step was taken during certain financial panics and was successful in restoring normal conditions. Apparently the prospect of being able to secure Bank of England notes (whether issued against gold or not) was sufficient to allay panics. An expert committee (the Macmillan Committee of U.K.) recommended abolition of the system. It has now been abandoned by most of the countries which had it (including U.K.).

2. **The Maximum Limit System.** Under this system (which was in operation in France prior to 1928) *the State fixed a limit up to which notes can be issued without any reserve and beyond which notes cannot be issued without permission from the legislature*. The system gives full discretion to the issuing authority as regards reserves.

It is economical because the amount of gold kept in an unproductive form can be reduced to a minimum. But if the limit is fixed too low the note-issue system becomes inelastic, if it is fixed too high there arises the possibility of inflation.

3. **The Proportional Reserve System.** Under this system *a certain percentage of the total note issue (varying from 25 to 40) has to be kept in reserve in the form of gold.* The remaining part of the note issue is covered by government securities and approved commercial paper. It is generally also provided that subject to certain conditions and penalties the reserve ratio may be allowed to fall below the legal minimum. The proportional reserve system is simple to operate and secures elasticity. The defects of the system are as follows :

(i) It is not economical because an unproductive gold reserve has to be kept.

(ii) When the central bank's stock of gold falls, the note issue contracts more than in proportion and deflationary effects are produced on trade and industry.

(iii) Since the gold reserve is considerably less than the total note-issue it is useless in times of real trouble. If public confidence in the notes disappears, the reserve becomes insufficient to liquidate all the notes ; if public confidence remains, the reserve is unnecessary. It may, however, be said that the existence of a partial reserve is usually sufficient to create public confidence.

4. **The Proportional Reserve not based on Gold.** In some countries there is provision for a legal percentage of reserve but *the reserve can be held partly in the form of gold and partly in the form of approved foreign moneys.* In India this system was in use up to 1956. The system has the following advantages :

(i) Since a part of the reserve can be held in the form of (foreign) interest yielding securities, it is economical.

(ii) It is highly elastic.

(iii) It enables the central bank to control the rates of foreign exchange more easily. The foreign securities can be sold when the balance of payments is adverse and when the external value of money tends to fall. Conversely when the balance is favourable and when the external value tends to rise, more foreign securities can be purchased, thus keeping the rate of exchange steady.

The chief danger of the system is possible inflation of currency. During the 2nd World War, U.K. purchased goods from India and paid in sterling bills in London, against which the Reserve Bank issued notes. Thus money supply increased while available goods decreased and the purchasing power of the rupee fell to about one-fourth of what it was. The consequence however, was really due to an improper use of the Reserve Bank's note issuing power. A

foreign balance, if it is judiciously used, is a source of strength, not weakness, to the monetary system. But the foreign balance need not necessarily be a part of the legal reserve against note issue. There must be a distinction between reserves held for the stabilisation of the rate of foreign exchange and reserves held against notes issued for internal circulation.

5. The Minimum Reserve System. Under this system the Central Bank *can issue notes up to any extent* against government securities and approved commercial paper *but must keep a statutory minimum reserve of gold and foreign securities*. The system was adopted in India from 1956. The Reserve Bank of India must now keep, as reserve, gold worth Rs. 115 crores and foreign securities worth Rs. 85 crores whatever be the volume of note-issue.

The method of minimum reserves imparts *a high degree of elasticity and flexibility to the note-issue system*. The power to issue notes can be used for inflationary finance, should it be needed for developmental purposes. In India the system was adopted because the foreign securities (formerly kept as reserve against the note-issue) were needed to meet the foreign exchange requirements of the Five Year Plans and because the new system would facilitate deficit financing.

The Minimum Reserve System is *particularly suitable for under-developed countries* which have adopted planned programmes of economic development. The needs of planning are of greater importance than the keeping of a hoard of unproductive reserves in the hands of the Central Bank.

But the system is *highly dangerous*. It makes inflation too easy. Also, it is not safe to ignore the function of currency reserves in maintaining public confidence in the note-issue system. The minimum reserve system will be successful only under a strong and incorruptible government which follows a sound economic policy and is successful in keeping public opinion in its favour.

Conclusion. The principles by which the note-issue system is regulated should depend on the particular economic circumstances of the country concerned. The objectives to be aimed at are *economy, elasticity, safety and stability*. The trend in most countries now is towards the adoption of a reserve system which is sufficiently flexible for their developmental needs.

TESTS OF A SATISFACTORY MONETARY SYSTEM

In former times economists spent a good deal of time in discussing the relative merits and demerits of bimetallism, gold standard and other monetary systems. Each system had supporters and critics. These controversies have become now irrelevant because the paper standard is in operation everywhere. But every paper standard is

under the control and management of the government concerned. Whether the system is good or bad depends on the manner in which it is controlled and managed. There are different opinions as to what is good monetary *policy*. But it is generally considered that a monetary *system* is good if it satisfies the following conditions :

1. The price level is reasonably stable.
2. The rate of exchange is reasonably stable.
3. The money supply is elastic, *i.e.*, can be increased and decreased according to the requirements of trade and industry.
4. The system is economical.
5. The method of operation is simple to understand.

MONETARY POLICY

The term Monetary Policy is used to denote the policy of the Government regarding monetary matters. The Government must determine the aims or objectives to be attained through monetary management, including the expansion and contraction of money in circulation. The Government must also decide what methods are to be used for attaining the objects. All these things are included within the purview of monetary policy.

Aims of Monetary Policy : Monetary Policy can be framed with many different objectives. The possible objectives are discussed below.

1. **Stability of External Value.** The monetary policy of a country must aim at securing *stability of the rate of foreign exchange*. Stable exchange rates are highly important for countries like Great Britain whose economic prosperity depends upon foreign trade. It is also important for other countries because fluctuations in the rate of foreign exchange hamper international trade. The pre-1914 gold standard secured exchange stability by sacrificing stability of the internal price-cost-income structure. Nowadays exchange stability is secured through exchange control. Exchange stability is not inconsistent with internal price stability. The external and the internal value of money are two aspects of the same thing, *viz.*, the purchasing power of money. There is no reason why both cannot be kept stable by efficient management.

2. **Balance of Payment.** The monetary authority should formulate the policy necessary for maintaining balance of payment of the country.

3. **A Stable Price-level.** A monetary policy intended to secure stability of prices should be followed on the following grounds :

(a) Rising prices and falling prices are both bad ; therefore stable prices are best.

(b) Money is a measure of value and like other measures should be unchanging.

(c) Since money is a store of wealth, variations in its value cause unnecessary loss or confer unfair advantage, both of which are against the principles of natural justice.

(d) Since business cycles are always associated with violent price fluctuations, it is possible that price stability may end them or at least mitigate their evils.

(e) Stable prices will reduce inequality of incomes and secure social justice.

The only argument that can be advanced against stable prices is that it *may not provide sufficient incentives to trade and industry*. This, however, is a fallacious argument because the normal profits, earned by entrepreneurs, can provide sufficient incentives.

There are certain *difficulties* standing in the way of a policy of securing a stable price-level.

(i) Monetary policy can only aim at stabilisation of the general price-level or average prices. But a stable average may co-exist with widely varying individual prices.

(ii) Price-changes are sometimes due to variations of consumer choice. There should be no interference with such changes.

(iii) Improvement of industrial technique or new inventions may reduce costs of production and tend to bring prices down. The general level may be kept up under such conditions by creating more money but such a policy will enable producers to make unjustifiable profits at the cost of wage-earners and consumers. The consequences will be the same as under inflation. Keynes calls this situation profit-inflation.

(iv) Costs of production may rise as a result of rise in the costs of imported materials or capital goods. Keeping prices stable under such conditions will reduce profits to below normal and check enterprise.

It follows that *price stabilisation cannot be a good monetary policy under all circumstances*. It should be the general aim of governments and central banks to keep prices stable but this must be subject to *important exceptions and qualifications*.

4. **Rising Price v. Falling Price.** Some writers recommend that monetary policy should be so arranged as to secure a gently rising price-level with a view to giving producers and businessmen a continuous incentive to enterprise. This policy may be criticised on the following grounds : (a) the ordinary earning of entrepreneurs or their normal profits provide sufficient incentive ; (b) rising prices may produce speculative activity and create an artificial boom which will end in a crisis ; (c) if it is known beforehand that prices will rise, wage-earners and suppliers of materials will ask for higher prices for their services and the advantage of rising prices will be neutralised ; and (d) rising prices produce profit for the capitalist groups at the cost of wage earners,

the purchasing power of whose income decreases. The policy of deliberately raising prices has not been consciously applied in any country but history shows that under a managed paper standard the price-level *usually follows* an upward course.

Improvement of industrial technique and scientific advance increases productivity and ought to lead to falling prices. But in fact it never does so because money supply is continuously increasing. If the Government, however, adopts a deliberately deflationary policy there may be serious consequences on trade and industry. The British Government did it in 1925 when it fixed the gold value of the Sterling at pre-1914 rates in an attempt to restore the gold standard. But costs of production did not fall as wages could be reduced. So British industries found themselves unable to compete in the world's market. British exports fell, the balance of payments became adverse and gold began to flow out. The process ended only in 1931 when the gold standard was abandoned and the internal value of the Sterling was allowed to fall. So falling prices whether violent or gentle, cannot be recommended as good policy.

5. **Avoidance of Cyclical Fluctuations.** (See Ch. 34). Many economists are of opinion that business fluctuations are caused by monetary factors and can be remedied by monetary weapons.

Anti-cyclical monetary policy consists of two parts : (i) regulation of bank credit and (ii) an appropriate interests policy. Bank credit can be regulated by the Central Bank by variation of bank rate, open market operations etc. Through these weapons the Central Bank can restrict credit to choke off a boom and expand credit to avoid recessions. These operations are supplemented by raising interest rates in times of boom and lowering them during recessions and depressions.

According to Keynes and other writers, business cycles are not caused by monetary factors and hence purely monetary weapons cannot prevent them. It has, however, been found that monetary policy can *reduce the range of business fluctuations, i.e.,* make booms and slumps less severe. Monetary measures are therefore adopted by Central Banks whenever signs of over-activity or depressions appear.

6. **Cheap Money.** Cheap money means *low* rates of interest. The Central Bank of a country can, through an appropriate monetary policy, keep the market rates of interests low. Keynes recommended that it should do so, because cheap money has the following advantages :

- (i) It keeps production costs low.
- (ii) It promotes new investments.
- (iii) It increases the volume of employment.
- (iv) It moves the economy towards full employment.

The measures by which cheap money can be secured are as follows :

- (i) A low bank rate. (ii) Open-market operations of the type which

increases cash reserves of the banks, *viz.*, purchase of securities or price-support to government securities. (iii) Maintaining money supply at a high level.

During World War II and thereafter up to 1951, the government of U.K. and India followed the cheap money policy primarily because it enabled them to borrow money from the public at low rates.

The cheap money policy has been criticised on the following grounds : (i) it encourages loans for speculative purposes ; (ii) it facilitates the hoarding of stocks by dealers with borrowed money ; (iii) it reduces the income of banks and insurance companies who have to hold government securities as part of their assets ; (iv) it increases the volume of credit money ; and (v) it is a dangerous inflationary force.

In most countries now the interest policy varies according to the economic situation. When signs of inflation appear, interest rates are raised. During recessions they are lowered. So a *flexible interest policy* is followed.

7. Full Employment, Maximum Output and Growth. (See Ch. 34). According to Keynes, full employment of the available resources in a country, which will naturally lead to maximum output, can only be secured by maintaining an adequate volume of expenditure in the community. Private expenditure generally falls short of what is needed and the difference must be made up by public expenditure. *The money for such public expenditure can be secured by printing paper notes.* No inflationary effects will occur so long as there are unemployed resources. In Keynes' view, purely monetary policies like variation of the bank rate or open market operations are of no importance. What is important is *securing full employment and maintaining it through an adequate fiscal policy.* The supply of money is to be adjusted, as required, for securing this objective.

Conclusions : Practical bankers are not inclined to accept the Keynesian view that monetary policy is of no importance. Thus one writer says, "the relationship between monetary policies and employment is not sufficiently direct to make this (full employment) a feasible guide for current credit policy".¹ The same writer continues, "no single guide can be adopted as an adequate basis for monetary policy. The broad objective may be stated to be to contribute through the regulation of the volume, availability, and cost of money to the maintenance of stable economic conditions and a rising level of economic well-being."

On the other hand, economists of modern times mostly agree with Keynes that *full employment should be the objective* of economic policy. It is also generally agreed that the method of achieving it is by greater government expenditure through created money.

¹ Goldenweiser, *Monetary Management*, p. 24.

Monetary policy is now regarded as subordinate to economic policy. Central Banks and Government treasuries, Central Bank policy and fiscal policy, have merged into each other. "We are not really greatly interested any more in stable prices nor in stable incomes; whether money is neutral or not does not really matter... For practical purposes monetary policy has become a poor and compliant relation of budgetary policy".²

RECOMMENDED READINGS

1. A. C. L. Day, *Outline of Monetary Economics*, Ch. 38.
2. Halm, *Economics of Money and Banking*, Ch. II.
3. Benham, *Economics*, Ch. XXXVIII.

EXERCISES

1. What are the features and merits of the Gold Standard? Give reasons for its disappearance. (C.A. Nov. '70).
2. Account for the fall of Gold Standard. (G.U. & D.U. '67).
3. Discuss the different methods for the regulation of the note-issue. Which of them do you prefer and why?
4. Explain what is meant by a "monetary system" and enunciate the essential features of a sound and satisfactory monetary system.
5. What are the objectives of monetary policy? What objective in your opinion should be preferred?
6. Discuss the case for a gradually rising price level. (C.U. B.A. '72).

²Coulborn, *A Discussion of Money*.

CHAPTER 29

CENTRAL BANKS: THEORY AND PRACTICE

THE THEORY OF CENTRAL BANKING

Definition. The Central Bank is the head of the banking system of a country. It has powers of supervision and control over all other banks. It also manages and controls the monetary system.

Central Banks have now been established in all financially developed countries. They are known by different names in different countries. In India the central bank is known as the Reserve Bank; in U.K. it is called the Bank of England; and, in U.S.S.R, it is known as the Gosbank. In U.S.A. central banking functions are performed by a number of banks, called Federal Reserve Banks, acting under the control of the Federal Reserve Board.

Central banking developed much later than commercial banking. The Federal Reserve System of U.S.A. was organised in 1913. In India, the Reserve Bank was established in 1934, though central banking in a rudimentary form began in 1921 with the formation of the Imperial Bank of India. The utility of central banking was fully realised only after World War I. Nowadays such an institution is considered indispensable in every country.

The degree of control exercised by a Central Bank, over the monetary and the banking system, differs from country to country. In U.K. and India the Central Bank possesses very wide powers. In Switzerland very little powers have been given to it. The current trend, at least in an underdeveloped country, is to confer on the Central Bank very wide powers of supervision and control.

Central Banks are operated either directly by the State or by an organisation completely subordinate to the State. In all countries the Central Bank acts in close co-operation with the other financial organs of the State (e.g., the Treasury in U.K.).

Necessity. Central Banks are necessary because of the following reasons :

1. *The Monetary system requires management.* "Money will not manage itself" said Bagehot long ago. Even the gold standard was not fully automatic. The paper standard, which is in operation in every country now, has to be directed by some central authority.

2. *The banking system requires control and regulation.* The banks of a country exercise great influence on its industries and trade.

But, being private institutions, their actions are determined by motives of gain. Because they are competitive concerns they cannot follow a common policy according to national requirements. The result is creation of too much credit sometimes and too little at other times. A central co-ordinating authority, which will compel them to follow the policy appropriate under the particular economic situation, is therefore necessary.

General Principles of Central Banking. Central Banking is fundamentally different from other types of banking.

1. *A private bank is operated for private profit, a Central Bank for the public good.* A Central Bank is not a dividend hunting concern. It does not allow interest on deposits and is prohibited from investing in risky enterprises.

2. *The Central Bank is the ultimate source of money supply in the country.* It has monopoly over note-issue which constitutes the major part of legal tender money. By various methods it controls the volume of bank money. The power over money supply should be used in such a way as to ensure that the monetary and the banking system operates in accordance with the economic policy followed by the State.

3. *The Central Bank should be impartial* as between the different sectional interests in the country. It should not be subservient to any particular political party. Its sole concern should be public interest and the welfare of the country as a whole.

Constitution. Central Banks may be owned by private shareholders or by the State. However owned, they are managed either directly by the State or in accordance with principles laid down by the State. The chief argument in favour of private ownership of Central Banks is that they are thereby freed from political influences and interference from party bosses. The chief argument in favour of State ownership is that control and guidance of monetary and credit policy should remain solely in the hands of the State and that private shareholders, however efficient and trustworthy, should have no voice in such matters. The tendency in modern times is towards State ownership. The Bank of England was nationalised in 1946 and the Reserve Bank of India in 1948. The Federal Reserve Banks of U.S.A. are owned by its member banks but the management is largely directed by the Government.

The management of a Central Bank is entrusted to a Governor who is assisted by a board or executive committee. The Governor is generally appointed by the State. In State-owned Central Banks the board consists of members nominated or appointed by the State. In some countries there are local committees in different regions to help and advise the central board.

FUNCTIONS OF THE CENTRAL BANK

The Central Bank controls the monetary and the banking system of the country. Monetary policy is an important part of the economic policy of the State. The Central Bank is the agency through which the State enforces its economic policy. To carry out this objective, the Central Bank is entrusted with a number of functions. They are enumerated below :

1. **It controls the volume of currency.** The Central Bank is usually given the sole authority to *issue notes* which circulate as legal tender money. Token Coins and small change (though manufactured in Government mints) are put into circulation through the Central Bank.

The Central Bank has to keep a reserve against the notes issued by it. The amount and composition of such reserves is determined by statutory rules. Usually the rules provide for the keeping of a certain amount of gold and foreign securities. In some countries the amount of gold and foreign securities must bear a fixed proportion (25% to 40%) of the total note-issue. In some countries (e.g., India) it is necessary to keep a minimum reserve, the amount of which is prescribed by law. Notes issued in excess of the total amount of gold and foreign securities have to be covered by government securities and commercial paper.

It is possible for the Central Bank to expand and contract the note-issue by varying the amount of government securities and commercial paper held by it. Since notes constitute the major part of legal tender money, the money-supply of the country depends on the policy of the Central Bank regarding note-issue. *The Central Bank is the ultimate source of money-supply in the country.* The lending policy of private banks, which depends on their cash-reserves, can be influenced by the Central Bank's policy regarding money-supply.

2. **It controls the volume of credit.** The volume of credit money depends on the lending policy of the commercial banks. The Central Bank can influence the lending policy of banks by *direct and indirect* methods. In some countries (e.g., India) the Central Bank can give instructions to private banks regarding loans and advances and regarding the securities to be kept. Sometimes the Central Bank is given power to fix the margin requirements for different types of loans. This is known as Selective Control of Credit. The Central Bank can persuade the banks to follow a particular policy by giving them necessary advice. The methods described above can be called direct methods of control. The indirect methods of control are those which force the banks to change their lending policy by bringing about a change in the amount of their cash-reserves. There are three such

methods : (i) Variation of the Bank-rate, (ii) Open Market Operation, and (iii) Variation of the reserve-ratios.

3. **It is the Banker's Bank.** All other banks are required to have accounts with the Central Bank and to keep with it a certain percentage of their deposits. The Central Bank is the custodian of the banking reserves of the country. It guards the national gold stock. It also lends money to the other banks when necessary. Such loans are usually granted by rediscounting first class bills of exchange, and against the security of government promissory notes and approved commercial paper. The Central Bank is the *lender of last resort* because the money supply of the country is under its control.

4. **It is the Banker of the Government.** Government balances are kept with it and it gives short term loans to the Government. The Central Bank also manages the public debt. De Kock¹ observes that, "Central Banks everywhere operate as bankers to the State not only because it may be more convenient and economical to the state, but also because of the intimate connection between public finance and monetary affairs".

5. **Stability of foreign exchange.** It is responsible for maintaining the external value of the country's currency (the rate of foreign exchange). Countries which had gold standard depended on the Central Bank for managing it. Under managed paper currencies the Central Bank has charge of the foreign exchange reserves and exchange control operations.

6. **Functions in Underdeveloped Countries.** In underdeveloped countries, the central banks have certain special *functions*. In such countries the Central Bank is required to assist the institutions set up to provide industrial and agricultural finance. It is also required to facilitate economic planning by appropriate monetary measures. In underdeveloped countries the banking system suffers from various deficiencies. For example, in India there is a lack of banking facilities in the rural areas. It is the duty of the Central Bank to remove such deficiencies. In short it may be stated that *in underdeveloped countries the policy of the Central Bank must be oriented towards economic growth and development*.

7. **Miscellaneous Functions.** In many countries the Central Bank has been given certain *miscellaneous functions*, some of them of a *developmental character*, e.g., agricultural credit in India. It gives advice to the government on important questions of economic policy. Central Banks issue periodical returns and reports relating to different aspects of monetary and economic policy. In many countries the

¹ De Kock, *Central Banking*.

Central Bank employs an efficient staff to carry on research. In all countries the Central Bank acts as the Clearing House.

Relative Importance. There has been some discussion among economists about the relative importance of the different functions performed by the central bank. According to Hawtrey, the primary function of the central bank is money-supply to other banks. It is the lender of last resort. According to Kisch and Elkins, the most important function of the central bank is, "the maintenance of the stability of the monetary standard". According to A. C. L. Day,² the main function of a central bank is, "to help control and stabilize the monetary and banking system". It is nowadays believed that all the functions of a central bank (as enumerated above) are essential because they are all necessary for the safety and stability of the economic system of the country.

PRINCIPLES OF CREDIT CONTROL

Definition. Credit-control means control over the volume of credit. The volume of credit depends on the volume of loans granted by the banks. Therefore, control of credit involves control over the lending policy of banks.

Necessity. Credit control is necessary for various reasons. Credit-money is an important part of the money supply of a country. Too much credit creation has an inflationary effect. It (i) raises prices, (ii) gives an artificial stimulus to business, which ultimately ends in a crisis, (iii) encourages imports (because of higher prices) and (iv) tends to create an unfavourable balance of payments. On the other hand, too little credit has a deflationary effect. It adversely affects industry and trade and leads to depression and unemployment. The Central Bank, as the central monetary authority of the country, should prevent both too much credit creation and too little.

Objectives. According to Burgess,³ the objective of credit control is the "adjustment of the volume of credit to the volume of business". Credit is required for carrying on trade and industry. When business expands more credit is required; when business contracts less credit is required. A lack of balance between the volume of business and the volume of credit leads to either inflation or deflation. The Central Bank should regulate credit in accordance with the needs of business.

The credit control operations of central banks are undertaken for the following objectives.

(a) *Stability of Internal Prices*: Unstable prices have injurious effects on the economy. Inflations and deflations are both bad. The

² Day, *Outline of Monetary Economics*, p. 133.

³ Burgess, *The Reserve Bank and the Money Market*.

Central Bank by controlling credit can prevent inflationary and deflationary trends.

(b) *Stability of the Rate of Foreign Exchange* : The foreign trade is affected by changes in the price level. When prices rise, exports fall and imports increase ; when prices fall, exports increase and imports fall. In either case, the balance of international payments is affected and the rate of foreign exchange tends to change. Since the price level is influenced by the volume of credit money, the Central Bank can contribute to exchange stability by controlling the volume of credit. Exchange stability and internal price stability are not contradictory objectives. Formerly (under the Gold Standard) exchange stability was secured at the cost of price stability. Nowadays Central Banks aim to secure both.

(c) *Avoidance of Business Cycles* : Business Cycles are periodic fluctuations in production and employment, which occur in capitalistic countries. They consist of alternating periods of booms and depressions. During booms, the volume of credit money tends to be large and during depressions it tends to be small. The Central Bank can counteract either tendency by an appropriate policy of credit control.

(d) *Protection and Preservation of the Gold Reserve of the country* : The Central Bank is the custodian of the Gold Reserves of the country. Expansion of the volume of credit may (by increasing imports) create an unfavourable balance of payments and lead to gold exports. The Central Bank may have to control credit with a view to prevent such exports. This objective was very important under gold standards. Nowadays gold exports (and imports) are regulated through exchange control.

Methods. The methods by which the Central Bank controls credit can be divided into two classes :

- (1) *Quantitative controls.* Variation of the bank rate, open market operation and variation of the reserve ratio are intended to expand or contract the total volume of credit. All loans, whether good or bad, are equally affected. They are also called the traditional method of control.
- (2) *Qualitative Controls.* There are certain control measures which encourage loans good from the economic point of view and discourage loans considered to be bad. They are also called Selective Controls.

Details each of the above control measures are stated below.

I. Quantitative Controls—

1. *Variation of the Bank Rate* : The Bank Rate is the official minimum rate at which the Central Bank rediscounts approved trade bills or lends money to other banks against approved securities. Thus,

the Bank Rate is the lending rate of the Central Bank. When the Bank Rate is raised, the market rate of interest tends to rise. This discourages new loans and puts pressure on debtors to repay their existing loans. Contraction of credit follows. When the Bank Rate is lowered, new loans are encouraged and credit tends to expand.

2. *Open Market Operations*: Open Market Operations mean purchase and sale of securities in the open market by the Central Bank. When the Central Bank sells securities, money flows to it, the reserves of other banks diminish and they are forced to lend less. Conversely, when the Central Bank buys securities, money flows out of it, the reserves of other banks increase and credit tends to expand.

3. *Variation of the Reserve Ratio*: In some countries all banks have to keep in deposit with the Central Bank a certain percentage of their demand and time deposits. The percentage of compulsory deposit is called the Legal Minimum Cash Reserve Ratio or (shortly) the Reserve Ratio. In India and U.S.A. the reserve ratio can be varied within certain limits.

When the reserve ratio is raised, banks have to keep more money with the Central Bank. Their own reserves are reduced and they can lend less. When the reserve ratio is lowered, the reserves of all banks are increased and they can lend more. Thus by varying the reserve ratio, the Central Bank can influence the volume of credit in the country.

II. Qualitative Controls—

1. *Regulation of margin requirements*. The banking laws provide special methods of credit control in U.S.A. The Federal Reserve authorities have power to regulate the terms on which transactions in stock market securities are financed. The margin requirements for loans against shares can be increased up to 100%.

2. *Regulation of Consumer Credit*. Regulations have been laid down in certain countries, restricting loans for instalment purchases of certain commodities like motor car. Selective controls of this type can be extended to all types of loans.

3. *Rationing of Credit*. The Central Bank may ration credit, in addition to limiting interest rates and margin requirements. The Central Bank can lay down definite credit quotas for each type of business loans.

4. *Moral Persuasion*. The Central Bank, being usually respected by all banks, can by advice and request influence their lending policy. This is called moral 'suasion. *Publicity* of the announcements of the Central Bank and statements of policy of the bank have an effect on the work of the other banks.

5. *Direct Orders*. In some countries, the Central Bank is empowered by law to issue directions to all banks. In India the Reserve

Bank can, under the Banking Companies Act of 1949, prohibit particular types of loans, give advice on lending policy and compel changes in the board of directors of any bank. If a bank fails to comply with the orders of the Reserve Bank, it can be closed down. In India, the leading commercial banks have been nationalised (14 top banks in 1969). The activities of these banks can be controlled fully.

Difficulties of Credit Control. Central Banks use all the methods of credit control available to them under the law of their country. Different methods vary in effectiveness according to the particular economic circumstances of the country concerned. Generally speaking, open-market operations are more effective than the other methods.

There are certain limitations of the Central Bank's power of credit control. They are enumerated below.

1. In many countries there are banks *outside the influence of the Central Bank*. In India the Indigenous Bankers carry on business with their own resources and do not come to the Reserve Bank for accommodation. In U.S.A. about one-half of the commercial banks with about one-fifth of the total deposits are outside the Federal Reserve System. The lending policy of such banks are not much affected by variations of the Bank Rate. They may, however, be controlled by direct orders and other methods.

2. The weapons of credit control possessed by central banks *can influence bank credit but not commercial credit* (i.e., credit allowed to purchasers by commercial establishments and industrial firms). Many sales are made on credit and they have influence on the price level.

3. The Central Bank can increase money supply by purchase of securities in the open-market or by lowering the reserve ratio. *But such increase will not lead to expansion of credit if investment opportunities are lacking and business confidence is at a low level.* It is easier to contract credit.

4. The Central Bank's policy regarding the rate of interest may be affected by *changes in liquidity preference or of the velocity of circulation of money*. An increase of money supply will not reduce the rate of interest if simultaneously the desire of the people to hold cash increases, i.e., if liquidity preference increases. The same effects are produced by a fall in the velocity of circulation of money. So, reducing the rate of interest is difficult. It has been found easier to raise the rate of interest.

THE BANK RATE AND THE MONEY MARKET

Definition and Characteristics. The Bank Rate is the minimum lending rate of the Central Bank. The Bank Rate is effective as an instrument of credit control only if the market rate of interest varies

with it. In underdeveloped money markets this is generally not the case. Thus in India the Indigenous Bankers are outside the control of the Reserve Bank. The discount rate of the Reserve Bank has comparatively less influence on the money market than the discount rate of the Bank of England. In developed money markets (e.g., in Great Britain) the Bank Rate effectively influences the market rate of interest. The reason is that in such countries the Central Bank is the lender of last resort. The commercial banks have to go to the Central Bank for financial accommodation. If the cost of such accommodation is increased (e.g., by raising the Bank Rate) the commercial banks have to raise their own lending rates. Thus the market rate of interest follows the Bank Rate.

Effects. If the Bank Rate is raised and the market rate rises along with it, the following effects are produced :

1. *There is contraction of credit.* Since the rate of interest is the price of loans, higher rates reduce the volume of loans. The volume of credit money falls and there is less money supply in the aggregate.

2. Higher interest rates increase the cost of business. When the rate of interest rises businessmen undertake a new venture only if it is expected to yield a return high enough to cover the added costs. The floatation of new companies is reduced. *The volume of new investments in the country falls.*

3. Reduction of investments *reduces the volume of employment and the level of income.*

4. Most of the dealers in the commodity markets hold goods with borrowed money. A rise in the rate of interest increases their expenses and they are forced to sell their stocks early. Such sales tend to reduce prices.

5. *The balance of payments position of the country, on the current account, is improved.* Money is attracted from foreign countries for short term investment and foreigners, having dues in the country, leave the funds in it so as to earn higher interest. The country's requirement of foreign currency is reduced and export of gold is prevented. Under gold standard, raising the Bank Rate was the usual remedy adopted whenever gold tended to flow out.

From the above list of effects it is apparent that raising the Bank Rate produces a *deflationary trend in the economy*. Contraction of credit, reduction of investments, fall in the level of income and forced sale of commodities lead to a fall in the level of prices.

Reduction of the Bank Rate produces consequences which are the reverse of those described above. The volume of credit tends to expand. New investments are encouraged. The level of employment and income rises. Speculative hoarding of stocks is facilitated. The

balance of payments position in the current account tends to be bad because foreigners withdraw their funds from a country where the rate of interest is low. The net effect is inflationary.

Limitations. It must be noted that reduction in the rate of interest does not necessarily lead to an expansion of the volume of credit. *People will not borrow, even when the rate of interest is very low, if investment opportunities are absent.*

Variation of bank rate usually has no effect in money markets of underdeveloped and unorganised countries. It may not have any effect in cost-push inflation and in hyper-inflation. It may be successful in the initial stages of inflation.

According to Hawtrey the bank rate influences the money market primarily through its effects on dealers holding stocks on borrowed money. According to Keynes the bank rate influences the long term interest rates, which determine the volume of new investments. The change in the rate of new investment affects employment and income.

OPEN-MARKET OPERATIONS

Definition and Characteristics. Open-market operations mean purchase and sale of securities by the Central Bank in the open-market. Such operations may be undertaken for two different purposes.

1. The Central Bank may want to *fix the price* of a particular type of security at a definite level and thereby *fix the rate of interest* on that type of security. *Example :* Suppose that there is a Government Bond with a face value of Rs. 100 on which interest is paid at 4%. Suppose that the Central Bank makes an offer to purchase unlimited quantities of such bonds at the price of Rs. 200 each. The Central Bank can make such an offer because it has unlimited quantities of money at its disposal. (It can create money.) The effect of the Central Bank's action will be to raise the market price of the Bond to Rs. 200. But by investing Rs. 200 on one of the Bonds a man can get only Rs. 4 per annum. (The Government pays Rs. 4 per bond.) Hence, the actual rate of interest on this type of Bond becomes 2%. By making similar offers for all types of securities the Central Bank can *fix the rate of interest on any desired level*. (It is possible to lower the value of a security and thereby raise the rate of interest by offering the security *for sale* at a price lower than its face value.) Open-market Operations undertaken for the purposes described above are called "Price Support to Government Securities" because they keep the price of such securities at a particular level.

2. Open-Market Operations may be undertaken *to alter the cash reserves of commercial banks*. When the Central Bank sells securities in the open market money flows from the bank accounts of the buyers to the Central Bank. The cash in hand of other banks is reduced

and their power to give loans is curtailed. Conversely, when the Central Bank buys securities the cash in hand of all banks increases and they can lend more.

Effects. The policy of price support to Government securities was extensively followed by Central Banks during World War II because they wanted to keep the rate of interest low (Cheap Money Policy, see p. 439). Nowadays open-market operations are undertaken principally to regulate the size of the cash reserves of commercial banks with a view to control the volume of credit in the country.

Open-market operations are powerful weapons of control because their effect on the volume of credit is several times larger than the amount of securities purchased and sold. If in a country the customary reserve ratio kept by banks between loans and cash is 10 per cent, reduction of cash by Rs. 100 will compel reduction of loans by Rs. 1000. So the volume of credit can be quickly and substantially affected by purchase and sale of securities.

Limitations. There are *certain limitations* upon the efficacy of open-market operations.

1. Open-market operations are effective only if the *cash reserve ratios of the commercial banks are fairly rigid*. A fall in the cash reserves will not lead to contraction of credit if the banks decide to keep a smaller quantity of cash as reserve. In most modern banking systems the cash reserve ratios are fairly rigid. Since the reserve ratio is fixed on considerations of security, banks do not generally risk altering it.

2. Sale of securities to the public will not affect bank reserves *if the people simultaneously dishoard money*. Similarly, purchase of securities will not have any effect *if liquidity preference increases* and people start holding more money in the form of cash.

3. Open-market operations *can contract credit easily but expansion of credit is more difficult*. The mere existence of cash with the commercial banks will not lead to more loans if the scope for new business is small or if business confidence is at a low level.

4. The extent of sale operations by the Central Bank depends on the amount of securities in its hands and the willingness of the people to buy them. As A.C.L. Day puts it, "before it can operate in the market it must have something with which to operate and there must be a market in which to operate". Commercial securities are usually salable readily but Government securities are not always so unless the price is reduced. There is no difficulty as regards the purchase of securities. For, the Central Banks can create securities by advancing money to the banking system.

5. The Central Bank can fix the rate of interest at any desired level. It can also fix the size of the bank reserves as required. But

it cannot do both simultaneously. If the Central Bank wishes to keep the rate of interest low it must purchase securities to the extent necessary. But this will automatically increase bank reserves and lead to expansion of credit. Conversely, if the Central Bank sells securities with a view to raise the rate of interest to a particular level, bank reserves will be automatically curtailed and there will be contraction of credit. If the Central Bank concentrates upon fixing the size of the bank reserves, it must allow the rate of interest to find its own level according to the demand and supply of loanable funds.

Conclusion. In spite of the aforesaid limitations, open-market operations are usually very effective in the well organised money markets of modern times. Central Banks nowadays rely very much on the use of this weapon for regulating the volume of credit.

VARIABLE RESERVE RATIOS

Definition. U.S.A. was the first country to introduce variable reserve ratios. Under this system every bank is required to keep with the Central Bank a certain percentage of its deposits. The percentage can be varied by the Central Bank within limits prescribed by statute. The system was adopted in India in 1956. The Scheduled Banks in India are required to keep in deposit with the Reserve Bank an amount varying between 5% to 20% of their demand deposits and 2% to 8% of their time deposits. The exact rate, within the aforesaid limits, is fixed by the Reserve Bank by notification.

Effects. By varying the reserve ratio the Central Bank can alter the cash reserves of banks and thereby control the volume of credit. When the reserve ratio is raised, the banks are forced to send more cash to the Central Bank. Their cash resources become less and their lending capacity is automatically reduced. When the reserve ratio is lowered, the cash resources of banks increase and they can lend more. A small change in the reserve ratio can produce a big change in the volume of loans because commercial banks generally maintain a ratio of 10 to 16 per cent between their cash in hand and advances.

Disadvantages of the System. The system of variable reserve ratios has been criticised on the following grounds :

1. The system forces the banks to keep a certain amount of *idle cash* with the Central Bank. As no interest is paid by the Central Bank on its deposits, the banks have to recoup their loss by charging more from the customers for their services. This criticism is not very strong. Since banks have to keep an idle cash reserve it does not matter if they kept a part of it with the Central Bank. Moreover it has been found in U.S.A. that banks are able to manage with smaller reserves because of the assistance provided by the Federal Reserve Banks.

4. In the case of the Bank of England and the Reserve Bank of India nationalisation was unnecessary because these banks always acted in accordance with the instructions of the Government. The existence of shareholder's representatives on the directorate merely operated as "a self-imposed scrutiny" by the State.

The argument in favour of private ownership of Central Banks have some force. Bureaucracy, red-tapism and party corruption are possible in every form of State enterprise. But they can be avoided if the legislature and the public are sufficiently conscious of their duties and rights. Such evils can creep in private enterprises also, particularly in monopoly businesses in which category Central Banks come. On the other hand, private ownership in an enterprise of national importance may produce greater evils, e.g., profit hunting or using the enterprise for the private gain of a particular group of persons. On the whole it is better that Central Banks should be under public ownership and management.

THE BALANCE SHEET OF A TYPICAL CENTRAL BANK

The Central Bank of every country issues a weekly statement of assets and liabilities which shows its position. In U.K. the weekly return of the Bank of England is called *the barometer of the money market* because the general financial situation of the country can be judged from it.

Following the model of the Bank of England, the Reserve Bank of India publishes its weekly return in two parts, one for the Issue Department and another for the Banking Department. A sample return, with the figures rounded off, is given below by way of illustration.

Reserve Bank of India, Statement of Affairs for the week ended

ISSUE DEPARTMENT

Liabilities	Rs. Lakhs	Assets	Rs. Lakhs
Notes held in the Banking Dept.	50,00	A. Gold Coin & Bullion	150,00
Notes in circulation	2000,00	Foreign Securities	200,00
		B. Rupee Coins	100,00
		Government of India Rupee Securities	1600,00
		Internal Bills of Exchange and Commercial Paper	Nil
Total Liabilities	2050,00	Total Assets	2050,00

BANKING DEPARTMENT

Liabilities	Rs. Lakhs	Assets	
Capital paid-up ..	5,00	Notes ..	
Reserve Fund ..	80,00	Subsidiary Coin ..	
National Agricultural Credit (Long Term Operations) Fund ..		Rupee Coin ..	
National Agricultural Credit (Stabilisation) Fund ..	5,00	Bills purchased & discounted ..	
Deposits ..		(a) Internal ..	50
(a) Government ..		(b) External ..	80
(1) Central Govt. ..	50,00	(c) Treasury Bills ..	8,00
(2) Other Govts. ..	40,00	Balances held abroad ..	8,00
(b) Banks ..	170,00	Loans and Advances to Govt. ..	50,00
(c) Others ..	200,00	Other Loans & Advances ..	80,00
Bills Payable ..	10,00	Investments ..	400,00
Other Liabilities ..	10,00	Other Assets ..	10,00
Total Liabilities ..	600,00	Total Assets ..	600,00

Explanation of the Items : The assets of the Issue Department consists of the following items. (i) Gold coin and bullion. Under the law the Reserve Bank must hold at least Rs. 115 crores of gold. (ii) Foreign securities. These are mostly sterling securities held in London. Under the law the Reserve Bank must hold a minimum of Rs. 85 crores of foreign securities. The actual amount of gold and foreign securities held is larger than the legal minimum. (iii) Rupee coins and notes. (iv) Government of India securities in terms of rupees. (v) Internal Bills of Exchange and other Commercial paper.

The total amount of notes issued constitute the liability of the Issue Department. The assets must of course equal the liabilities.

The liabilities of the Banking Department are as follows : (i) The paid-up capital and the Reserve Fund. This is a liability to the government because all the shares are owned by the government. (ii) The National Agricultural Credit (Long-term Operations) Fund and the National Agricultural Credit (Stabilisation) Fund have been created in 1956 for financing agriculturists. (iii) Deposits. The Reserve Bank holds deposits from the Central Government, the State Governments, public bodies like Municipalities, banks both scheduled and non-scheduled, and private persons. The deposits of banks include the part which is compulsorily depositable by them. (iv) Other liabilities. These include unpaid bills, the profit and loss account etc.

The assets of the Banking Department consists of the following items. (i) Rupee notes, Rupee coins and subsidiary coins. (ii) Balances held abroad ; which means balances held mostly in London to facilitate exchange control operations. (iii) Loans and Advances to governments. These are short term loans known also as "Ways and Means" advances. (iv) Other Loans and Advances. These are loans to other banks and State Co-operative Banks against securities. (v)

Bills purchased and discounted. These are bills of exchange rediscounted from other banks and treasury bills. (vi) Investments. These include Government securities and treasury bills purchased in the open-market. (vii) Other Assets. These include all assets not covered by the other items, *e.g.*, furniture, fixtures and property owned by the Bank.

SOME CENTRAL BANKS

I. The Bank of England. The Bank of England is one of the earliest Central Banks of the world. Established in 1694, as a privately owned bank to finance the King of England in a war with France, it was gradually entrusted with central banking functions until it became a full-fledged Central Bank. The Bank Charter Act of 1844 laid down rules regarding note-issue and other matters. Under the Act management was left to a Governor and a Board of Directors elected by the shareholders, but they always acted in close co-operation with the Government and no instance is known of its disobeying Government instructions.

In 1946 the Bank was nationalised. Now, the Governor and the Directors are appointed by the Government for 5 and 4 year-terms respectively. There are 16 Directors who, together with the Governor and a Deputy Governor, constitute the Court of Directors.

The Bank is divided into two departments—the Issue Department and the Banking Department. The Issue Department is concerned solely with note-issue. The whole of the note-issue is “fiduciary”. The notes are inconvertible and no official gold-backing is necessary. The amount of note-issue is fixed by the Government and can be increased and decreased whenever necessary. Originally the Bank of England operated under the Fixed Fiduciary System of note-issue. When the war broke out in 1939, the gold reserve of the Bank was taken over by the Government. Since then, Bank of England notes are covered by government securities, commercial paper and some coins.

The Banking Department acts as the banker of the Government and other banks, holding their balances. The Bank of England lends money to other banks by rediscounting first class bills and by advances against other securities. The minimum rate for rediscounting bills is called the Bank Rate. The Bank can lend money, at its option, to other banks against first class securities at a rate lower than the official Bank Rate.

The policy of the Bank of England is fully under the control of the Government. The Treasury can issue directions to it when necessary in the public interests. The Bank can ask for information on any point from any bank. It can give advice to other banks. With

the prior consent of the Treasury, the Bank can issue directions to any bank.

The Bank of England controls the volume of credit through variation of the bank rate and open-market operations. It is responsible for exchange control and the maintenance of the external value of the Sterling. The Bank of England also acts as the custodian of the central reserves of the Sterling Area. During the World War II it managed the Empire Dollar Pool.

The London Discount Market. The Discount Market is a peculiar feature of the London Money Market. In London there are nine public limited companies and three private firms who buy (or discount) bills of exchange. In addition there are a number of brokers who act as agents of the aforesaid discount houses. When the holder of a bill of exchange in London wants to have the bill discounted, he goes to the discount houses (either directly or through a bill broker) and not to a commercial bank.

The discount houses get their finance by borrowing from the commercial banks. These loans are repayable on demand ("at call" or on a short notice). The rate of interest is therefore very low. The discount houses make profit by charging a slightly higher rate of discount. They hold the bills for a month or so and then rediscount them to the commercial banks. Thus the commercial banks buy bills from the discount houses and not from private parties. The commercial banks usually hold the rediscounted bills up to maturity.

The existence of the discount houses leads to the following consequences.

1. The commercial banks can regulate their purchase of bills from the discount houses in such a way that approximately equal amounts of money fall due each week. This is convenient for their business.

2. When commercial banks are short of cash, they call in their loans from the discount houses. Thus they do not have to approach the Bank of England for loans.

3. When the discount houses are under pressure (from the commercial banks) they approach the Bank of England for loans which are given by the rediscount of bills.

Thus the London Discount Market is an intermediary between the commercial banks and the Bank of England. This institution is not found in any other money market of the world.

Since the beginning of World War II, the use of bills of exchange (both inland and foreign) has diminished considerably in Great Britain. Nowadays the discount houses deal mostly with Treasury bills issued by the Government.

II. The Federal Reserve System of U.S.A. The Federal Reserve Act, 1913, divided U.S.A. into 12 regions in each of which was established a Federal Reserve Bank. These 12 banks were intended to be 12 autonomous banks. But the Act also established a Federal Reserve Board at Washington which was given great powers. The Board is now called, Board of Governors of the Federal Reserve System. It is possible to say that the Board is the Central Bank of U.S.A. and the Federal Reserve Banks are its branches. The Federal Reserve Bank of New York exercises great influence on the Board, particularly as regards open-market operations and foreign exchange dealings.

The capital of each Federal Reserve Bank was obtained by compulsory subscription from the member banks. Each Federal Reserve Bank has nine directors divided into three classes A, B and C, of 3 members each. Class A directors may be bankers; class B must be persons taking active part in agriculture, industry or commerce. These six directors are elected by the member banks who are divided into 3 groups for voting purposes—large, medium and small banks. These groups elect one class A director and one class B director every year by turns. Each director serves for 3 years. The 3 class C directors are nominated by the Federal Reserve Board. The Chairman and Vice-Chairman of the Board of Directors of each Bank is also appointed by the Federal Reserve Board from the Class C directors. The chief executive officer of every Federal Reserve Bank is the President with one or more vice-presidents. They are appointed for 5 years by the Directors subject to the sanction of the Board.

The Board of Governors of the Federal Reserve System contains 7 members nominated by the President with the consent of the Senate. The maximum term of office is 14 years (with no reappointment). In recent times a "staggering" system has been introduced, so that every two years one member retires. The chairman and the vice-chairman of the Board are appointed from the Board by the President for 4 year terms.

Open-market operations of the Board are directed by the Federal Open-Market Committee which consists of 7 members of the Board and 5 representatives of the Federal Reserve Banks.

There is also a Federal Advisory Council consisting of one representative from each Federal Reserve District. Its functions are merely advisory to the Board.

The greater part of power in the system lies in the Board of Governors of the Federal Reserve System.

All commercial banks in U.S. are not required to be members of the Federal Reserve System. At present only about half the commercial banks of U.S.A. are members of the Federal Reserve System but they have nearly $5/6$ of the deposits.

On becoming a member, a bank must subscribe to the capital of the Federal Reserve Bank an amount equal to 6% of its capital and reserve (of this only 1/2 is immediately paid in, the balance is subject to call). This rule applies to subsequent increases of capital and reserve and conversely for reductions. Thus the capital of a Federal Reserve Bank is not fixed though it is fairly steady. Member banks receive 6% cumulative dividend on the paid up stock but have no voice in the management as stockholders.

Cheques in U.S. are cleared through the Federal Reserve Banks. There is provision for instantaneous transfer of credit from any part of the country to another.

The Federal Reserve Banks can fix their rates of discount and rediscount but they are subject to revision by the Board.

Member Banks are required to keep a reserve with the Federal Reserve Banks. The ratios are alterable within certain limits by the Board.

Reserve ratios of the Federal Reserve System.

Class	Limits	
	Demand Deposits	Time Deposits
1. Central Reserve City Banks	13-26	3-6
2. Reserve City Banks	10-20	3-6
3. Country Banks	7-14	3-6

The first group, Central Reserve City Banks, includes the banks of New York and Chicago. The second group, Reserve City Banks, includes 60 banks of certain important cities. The third group includes all other banks.

The ratios are alterable for purposes of credit control. The total reserves actually kept usually exceeds the minimum fixed.

In Great Britain the Bank Rate stands above the market rate. In U.S.A. the market rate is usually higher than the Federal Reserve Bank's schedule of interest rates for different types of paper. Member banks can make profit by borrowing from the Federal Reserve Banks and lending to others but do not do so, because, whereas in Great Britain the Bank of England (until 1951) automatically rediscounted first class bills, in U.S.A. the Federal Reserve Banks have a discretion and may refuse a loan.

Commercial Banks in U.S. hold a large stock of government bonds as part of their assets. Raising the rate of interest will diminish their value and lead to great loss. The Government therefore follows the policy of cheap money.

In 1933 the Federal Deposit Insurance Corporation (a Government Corporation) was established to insure deposits. Since 1973.

it insures up to \$20,000 per depositor. The Corporation exercises supervision over insured banks. All members of the Federal System are insured as also a number of non-members.

Currency in U.S.A. All monetary gold belongs to the Treasury which issues gold certificates to the Federal Reserve Banks for it. These certificates do not circulate. There are two types of notes which are principally in circulation—(i) Federal Reserve Notes issued by the Federal Reserve Banks, (ii) Silver certificates issued by the treasury against silver bullion or silver dollars.

Federal Reserve Banks must keep a reserve in the form of gold certificates equal to 25% of their note issue and deposits. Actually they keep about 50%.

RECOMMENDED READINGS

1. A. C. L. Day, *Outline of Monetary Economics*, Chs. 11, 12,
2. Halm, *Economics of Money and Banking*, Chs. 12 & 20.
3. K. Kurihara, *Monetary Theory and Public Policy*, Ch. 5.
4. Samuelson, *Economics*, (9th edition), Ch. 17.
5. Dr. S. K. Basu, *A Survey of Contemporary Banking Trends*.

EXERCISES

1. Give reasons for the view that every country must set up a central bank. (C.U. B.A. '69, '71).
2. Describe the constitution and functions of a Central Bank. (C.A. Nov. '68; May '70).
3. How does the central bank control the lending policies of commercial banks? (Mysore, B.Com. '68).
4. Describe the different methods employed by Central Banks to control credit. (C.U. B.A. '60, '62, '65, '66; B.Com. '64, '65, '68).
5. How does a modern Bank control the quantity and quality of credit? (Mysore, B. Com. '67).
6. What do you understand by selective credit control? Mention the different forms of selective credit control. (C.U. B.A. '73).
7. State the methods of Selective Credit Control. How far are they effective? (C.A. May '71).
8. Write note on—Bank Rate. (C.U. B.Com. '72).
9. What is meant by Bank Rate? Examine critically the operation of the Bank Rate. (C.A. May '71).
10. Explain and discuss the mechanism of Open Market Operation of a Central Bank. (C.A. Nov. '69).
11. State the steps a central bank to regulate the supply of credit. Discuss how far its action may be effective. (See C.A. Final Nov. '72).
12. Explain how Variable Reserve Ratio can control rise of prices. What are its limitations? (C.U. B.A. '74).

CHAPTER 30

INTERNATIONAL TRADE

PRINCIPLE OF COMPARATIVE ADVANTAGE

International Trade is trade between different countries or trade across political frontiers.

International trade is the result of geographical specialisation. Different countries possess different kinds of resources and skills. India possesses the climate, soil and other factors necessary for the production of tea and jute. She also possesses considerable acquired skills in the manufacture of cloth. On the other hand, India does not possess sufficient productive factors and skills for the manufacture of heavy machinery and electronic appliances. Therefore, India finds it more advantageous to use her resources for the production of tea, jute and cloth rather than for the manufacture of heavy machinery and electronic appliances. It is advantageous for a country to specialise in the production of goods for which it has relatively greater facilities. This is known as the *Principle of Comparative Advantage*. International trade is governed by this principle.

When each country specialises in its most advantageous products, the output of the world as a whole becomes larger and more goods are available to all. But the trading countries lose their self-sufficiency because none produces all its requirements. To get the remainder of its requirements each country must exchange its products with the products of other countries. Specialisation can take place only if such exchange is possible.

International specialisation does not mean that a country will forever export and import the same kind of goods. Comparative advantage may shift from one group of commodities to another in course of time. Thus an underdeveloped country may, by judicious planning, acquire the skills necessary for the production of industrial goods which formerly it had to import. *The pattern of international trade of a country changes along with its economic growth and development.* But the principles of comparative advantage is always applicable.

DIFFERENCES BETWEEN INTERNATIONAL TRADE AND DOMESTIC TRADE

International trade, in so far as it is the result of geographical specialisation, is fundamentally the same as trade between two regions

within the same country (domestic trade). Each region within a country tends to specialise in the production of commodities for which it possesses facilities. For example, jute is manufactured in West Bengal and cotton textiles in Bombay. The same is the case with different countries. Both international trade and inter-regional trade within a country are based on the *principle of comparative advantage*. But nevertheless, there are certain points of difference between the two types of trade. They are enumerated below.

1. *Labour and capital move freely between different regions of the same country but are comparatively immobile as between different countries.* The immobility is due to differences in language, religion, race, custom, economic organisation and the political system. Owing to these differences people do not like to send their capital abroad for investment. Nor do they like to go to other countries for work.

2. The price of a commodity, in the country where it is produced, tends to equal its cost of production. The reason is that if in an industry price is higher than cost, resources will flow into it from other industries, output will increase and the price will fall until it is equal to the cost of production. In the converse case, resources will flow out of the industry, output will decline, the price will go up and will ultimately equal the cost of production. As between different countries resources are comparatively immobile. There is no automatic influence equalising prices and costs. Therefore, *there may be a permanent difference between the cost of production of a commodity in one country and the price obtained for it in a different country.* The price of tea in India must, in the long run, be equal to its cost of production in India. But the U.K. price of Indian tea may be permanently higher than the cost of production of tea in India.

3. *Different countries differ in their natural advantages.* Some commodities can only be produced at particular places and not in others (except possibly at prohibitive costs). *Example*—jute in Eastern India, diamonds in South Africa and a few other places.

4. *The commercial policies of different countries are different.* Each country controls its foreign trade, for various economic and political reasons, by duties, import quotas and other methods. Such restrictions do not, as a rule, exist between different regions of the same country.

Owing to the differences enumerated above, between international trade and domestic trade, economists have built up a separate theory of international trade (the Principle of Comparative Cost etc.). It must, however, be noted that *the difference between international trade and domestic trade is not absolute but one of degree only.* Productive resources are not absolutely immobile between different countries.

Capital moves from one country to another, though not as freely as it does from one industry to another, within the same country. Labour also moves from one country to another, though not in large numbers. Again, neither labour nor capital is perfectly mobile as between different regions within the same country. There may be, within the same country, regional differences in language, custom and other similar factors which check movements of capital and labour.

THE PRINCIPLE OF COMPARATIVE COST

The Classical economists, Ricardo, Mill and others built up a theory of international trade based on what is known as the Principle of Comparative Cost. The principle is explained below.

Let us consider a simplified model of international trade, having the following features :

- (i) There are two trading countries X and Y.
- (ii) Each country can produce two commodities, rice and cloth.
- (iii) The cost of production of the commodities can be measured and expressed in terms of labour.
- (iv) Both commodities are produced under conditions of constant cost.

In our model the two countries X and Y can both produce cloth and rice but they may not have equal facilities for the production of both. If X has better facilities for the production of cloth, one day's labour in X will produce comparatively more cloth than rice. Similarly if Y has better facilities for the production of rice, one day's labour in Y will produce comparatively more rice than cloth. The ability to produce comparatively more may be due to the existence of natural advantages or acquired skills. Both these factors may be lumped together under a single heading: *abundance of the factors necessary for the production of a particular commodity*. Suppose that in our model, country X has comparatively abundant factors for the production of cloth and country Y has comparatively abundant factors for the production of rice. The output of the two commodities (per unit of labour) in the two countries will then differ. Suppose that the outputs are as follows :

In X,	one day's labour produces ..	5	units of cloth	,
"	" " " " " "	3	" " rice	
In Y	" " " " " "	2	" " cloth	
"	" " " " " "	9	" " rice	

The ratios 5:2 and 3:9 are called the ratios of comparative cost. The existence of a comparative advantage in the production of a commodity is shown by a difference in the cost ratios in the two countries.

The Principle of Comparative Cost states that (i) *international trade will take place between two countries when the ratios of comparative cost differ* and (ii) *each country will specialise in the production of that commodity in which it has a comparative advantage*. These propositions can be proved by the following arguments.

1. According to the figures given above for countries X and Y, if there is no specialisation and trade, the total output per day will be $(5+2)=7$ units of cloth and $(3+9)=12$ units of rice. [Two units of labour are being used in each country, one to produce cloth and the other to produce rice.] If now X specialises in cloth and Y in rice, employing two labourers each for the production of cloth and rice respectively, the total output becomes $2 \times 5 = 10$ units of cloth and $2 \times 9 = 18$ units of rice per day. The total output, taking the two countries together, is larger under specialisation. *Thus, both countries will have more of each product if they specialise and exchange their products.*

2. If there is no specialisation and trade and both countries produce both commodities, the ratio of exchange between cloth and rice will be, according to the figures given, 5:3 in X and 2:9 in Y. In X one day's labour produces 3 units of rice. If that labour is applied to the production of cloth, 5 units of cloth can be obtained. With these 5 units of cloth X can get from Y, $(5 \times 9/2) = 22\frac{1}{2}$ units of rice, because in Y the ratio of exchange between cloth and rice is 2:9. Thus X gets considerably *more rice by producing cloth and exchanging it for rice than by producing rice at home*. Similarly it can be shown that Y gets more cloth by producing rice and exchanging it for cloth from X. When there is complete specialisation the ratio of exchange between cloth and rice will be between 5:3 and 2:9. It can be shown that both countries will gain at any rate of exchange between these two ratios.

3. If the cost ratios in the two countries are identical, there is no gain from specialisation. Suppose that the cost ratios are 5:3 in X and 10:6 in Y. In this case if X sends 5 units of cloth to Y it will get from Y, $(5 \times 6/10) = 3$ units of rice. X could have obtained at home 3 units of rice with the labour that was required for producing 5 units of cloth. Therefore, *specialisation is profitable only when the cost ratios are different in the two countries*.

4. In the example given above, X has a comparative advantage in the production of cloth and Y in rice. The principle of comparative cost applies if one of the countries (say) X has an *absolute advantage* in the production of both commodities, i.e., can produce both commodities more cheaply than Y can (provided there is a difference in the ratios of comparative cost).

For example, suppose that :

One day's labour in X can produce	12 units of cloth
" " " " X " "	9 " " rice
" " " " Y " "	6 " " cloth
" " " " Y " "	5 " " rice

In this case also, specialisation and trade is advantageous because if X sends 12 units of cloth to Y it will get from it 10 units of rice—one unit more than it can produce at home. Thus there is gain from international trade at all ratios between 12:9 and 6:5.

The principle of comparative cost *can be extended to cover the case of a country producing a large number of commodities and the case of trade between more than two countries.* The commodities produced by a country can be graded according to the extent of comparative advantage enjoyed by each. The country will tend to specialise in the production of those commodities in which the extent of advantage enjoyed is comparatively larger. These commodities constitute the exports of the country. The case of many countries can be dealt with theoretically by taking one country (say) X as the home country and lumping together all other countries as a single country Y.

Criticisms of the Principle. The Classical Theory of International Trade, based on the Principle of Comparative Cost, has been criticised on various grounds some of which are mentioned below.

1. The theory is apparently based on only one factor of production or *the Labour Theory of Value*. This assumption has been discarded by economists. This criticism can be ignored because the Principle of Comparative Costs can be expressed in terms of marginal costs without any difficulty. The Labour Theory of Value is not an essential part of the Classical Theory of International Trade.

2. The theory *assumes* that the *law of constant costs* applied in all cases. This criticism also, can be ignored. The classical economists assumed constant costs for the purpose of simplifying the exposition of the theory. Modern writers have shown that the theory applies when the commodities are produced under conditions of increasing or decreasing cost. Varying costs of production affect the *ratios* of comparative cost, not the *principle*.

3. The theory *assumes* that *each trading country has a fixed quantity of resources*. It does not take into account the effects of growth and economic development. International trade influences the employment of resources and may cause changes in the ratios of comparative cost.

4. The theory *assumes* that *factors of production are perfectly immobile* as between different countries. This assumption is not absolutely correct because movements of capital and labour take place

from one country to another, though not to a very large extent. The classical theory can therefore be considered to be inadequate.

Conclusion. There is some truth in the last two of the criticisms stated above. They may, however, be regarded as limitations of the theory. On the whole it may be said that the principle of Comparative Cost provides an adequate explanation of international trade.

MISCELLANEOUS TOPICS

Is there Complete Specialisation? In real life complete specialisation may not occur. If country X has a comparative advantage for producing cloth it will do so in large quantities but may not completely abandon the production of rice and other things. The reasons why complete specialisation does not actually occur are as follows :

(a) Production of the exportable commodities may be subject to the law of diminishing returns so that it may not be advantageous to expand output beyond a certain level. The ratios of comparative cost are affected by the laws of return.

(b) A part of the cloth or rice may be of special quality which will find a market in spite of higher cost and price.

(c) By tariffs and other methods the State can induce the production of articles which would not otherwise have been produced. These methods are usually adopted in the case of essential commodities and infant industries.

Are only those articles imported which are more costly to produce at home? A country can produce an article more cheaply at home but nevertheless finds it advantageous to import it. This is so when the resources applied to the production of the article concerned can be used to produce another article with greater advantage. A good lawyer may also be a good typist but it will be more advantageous for him to confine himself to legal work and get his typing done by another person. The example given in para 4 of the previous section shows that even when a country possesses an *absolute* advantage over another country in the production of two articles, it may gain by importing one of them from the other. Therefore if country X is superior to country Y in the production of two commodities, it may gain by importing one of these commodities from country Y.

Can there be a large volume of trade between two highly industrialised countries? There is no reason why there cannot be a large volume of trade between two highly industrialised countries. Industries are of various types. Every industry requires the use of certain factors of production. There may be differences in the availability or the comparative efficiency of the factors even as between

two highly industrialised countries. Whenever the cost ratios differ, international trade can occur. A considerable amount of trade takes place between U.K. and U.S.A. both of which are highly industrialised countries. Before World War II, Germany used to export to U.K. cheap watches and high quality electrical instruments and used to import from U.K. fine watches and low quality electrical instruments.

What goods are exported and what goods are imported? According to the principle of comparative cost a country specialises in the production of goods in which it has a comparative advantage. From this principle it follows that a country exports commodities in which it has comparative advantage and imports commodities in which it has comparative disadvantage. According to Ohlin, comparative advantage arises when the factors of production of a commodity are in *abundant supply*. Hence a country exports those commodities which are produced with its *relatively abundant factors of production* and imports commodities the factors of production of which are *relatively scarce* in that country. The factors of production required for the production of jute, tea and cloth are relatively abundant in India; therefore these goods are exported from India. The factors of production required for motor cars and certain types of machinery are relatively abundant in U.S.A.; therefore, these goods are exported from U.S.A. In India, at the present stage of her development, factors for the production of motor cars and heavy machinery are relatively scarce; hence, these goods are imported into India. Thus, what goods are exported and what goods are imported depend upon the *relative abundance and the relative scarcity of factors of production*.

International Trade and Wages. High wages are not necessarily disadvantageous to a country's international trade. A country with a high level of wages may nevertheless produce goods cheaply if labour-productivity is high. For the same reason, low wages do not necessarily confer any advantage to a trading country. The important factor is labour-productivity. U.S.A., which is a high wage country, competes successfully in the international markets with U.K. which has a relatively lower level of wages.

While wages do not directly influence international trade, international trade influences the prices of all factors of production, including labour. Factors of production which are abundant in a country tend to have low prices while factors which are scarce tend to have relatively higher prices. As Ohlin pointed out, goods produced by the abundant factors are exported because they have low prices while goods produced by the scarce factors attract foreign competition because they have relatively high prices. When the international trade of a country increases there occurs a rise in the production of its export industries and a fall in the production of industries suffering

from foreign competition. As a consequence the demand for the abundant factors increases and the demand for the scarce factors diminishes. Hence, the prices of the abundant factors increase and the prices of the scarce factors decrease. Thus there occurs a tendency towards *equalisation of factor prices* in the country. International trade also tends to equalise the factor prices of different countries. Goods, which are internationally traded, tend to have the same prices in different countries (because of competition between different exporting countries). Uniformity of price tends to produce uniformity of factor remunerations.

TERMS OF TRADE

The expression Terms of Trade is used to denote *the rate at which a country obtains its imports in exchange of its exports*. How the Terms of Trade are determined can be illustrated by taking the example of two countries trading with two commodities.

Suppose that country X can produce with the same cost either 12 yards of cloth or 3 maunds of rice and similarly country Y can produce either 12 yards of cloth or 10 maunds of rice. If there is no international trade, the ratio of exchange between cloth and rice will be 12:3 in X and 12:10 in Y; *i.e.*, in X, 12 yards of cloth will exchange for 3 maunds of rice and in Y, 12 yards of cloth will exchange for 10 maunds of rice. X and Y will both gain if they specialise in cloth and rice respectively, and exchange their products. When trade between them commences, the rate of exchange between cloth and rice will lie somewhere between 12:3 and 12:10. The rate of exchange cannot lie outside these points because X will not accept less than 3 maunds of rice for 12 yards of cloth and Y will not accept less than 12 yards of cloth for 10 maunds of rice. The exact rate between 12:3 and 12:10, at which exchanges will take place, will be determined by the *relative intensities of demand of the two countries for rice and cloth respectively*. If X's demand for rice is relatively more intense than Y's demand for cloth, the rate of exchange will be nearer 12:3. In the converse case, it will be nearer 12:10. The actual rate will be that which *equalises the demand for and the supply of the two commodities in the two countries*. Thus, the terms of trade are determined by *reciprocal demand within the limits set by the ratios of comparative costs*.

In practice every country exports and imports a large number of commodities. The expression Terms of Trade must therefore be used to denote the relationship between *the exports as a whole and the imports as a whole*. For this purpose it is necessary to compare the price level of the exports with the price level of the imports. This is usually done in the following manner. Index numbers are prepared

of export prices and import prices, taking some recent year as the base. A third index number is prepared which shows the ratio between the two other index numbers for every year (import price index ÷ export price index). The third index number shows the changes in the price level of the exports relatively to the price level of the imports and is taken as the index number of the Terms of Trade.

The terms of trade are of very great significance to a country. They show the gains from international trade. An adverse change in the terms of trade reduces the gains and reduces the income level. Suppose that a substitute for jute is discovered and the price of jute in the world market falls. This will reduce the income of jute manufacturers in India and ultimately that of the jute growers. The level of wages and income in the jute industry will fall and in course of time will reduce wages and income in all industries. In the converse case (*i.e.*, when the terms of trade improve) there will be an all-round increase in the level of income, employment and wages. "*The real income per head of a country depends mainly on its output per head and partly on its terms of trade.*" (Benham).

The Principle of Reciprocal Demand, which determines terms of trade and international values, was first stated by John Stuart Mill. It was accepted by Marshall, Taussig and other economists. Modern writers are, however, of opinion that the principle can be applied only between countries of approximately equal economic position.¹ The terms of trade between a big a country and a small country cannot be determined by the reciprocal demand of these two countries alone because the total production of the small country may fall far short of the requirements of the big country. A big country buys goods from a large number of countries on a competitive basis and a small country buys only a small part of the products of a big country. The demand and supply conditions of a relatively small country has little influence on the determination of international prices.

THE GAINS FROM INTERNATIONAL TRADE

By specialisation and exchange a country gets more goods than what it could have got by producing everything at home. The difference between the *amount of goods available when there is international trade and the amount of goods available when there is no international trade* is the measure of the gains from such trade. The extent of the gain depends on the following factors :

1. *The Terms of Trade.* If in country X, 3 units of rice can be produced at the same cost as 12 units of cloth, it will gain if it obtains *more* rice from another country in exchange of 12 units of cloth. The

¹ Graham, *Quarterly Journal of Economics*, Vol. 28, p. 54.

extent of the gain will depend on how much more it can get. This depends on the terms of trade.

2. *The Reciprocal Demand.* The greater the relative demand for X's goods the better will be the terms of trade for its goods, because the rates of exchange or the barter terms of trade are determined by reciprocal demand.

3. *The Cost Ratios.* The cost ratios (12 : 3 and 12 : 10 in the example given above) determine the limits within which exchange takes place and serve as the base from which the gains from international trade can be calculated.

The above theory regarding the gains from international trade was developed by Ricardo, Mill and other classical writers. Later writers (e.g., Viner) doubted whether the gains could be measured in objective terms. They argued that international trade affects the distribution of income and produces shifts in the community's indifference curves. It cannot even be said with certainty that international trade produces gains in terms of welfare. If a country suffers from a comparative disadvantage in the production of wine and imports it in exchange of cloth, there may be a loss of welfare rather than a gain. These criticisms were answered by Samuelson who demonstrated that when trade is opened between two countries each country can obtain more of *every* commodity with less of *every* productive resources. Getting more goods at less cost will lead to an increase of economic welfare even though the extent of the increase may not be objectively measured. "Some trade is better than no trade".²

ADVANTAGES AND DISADVANTAGES OF INTERNATIONAL TRADE

International trade is a form of localisation. It confers all the advantages of regional specialisation. There is greater productivity because each country applies its resources to those branches of production where its relative efficiency is greatest. A large volume of goods is available to consumers of all countries. International trade also brings backward countries in contact with advanced countries which automatically leads to spread of knowledge and culture.

International Trade has also some disadvantages. Specialisation leads to dependence on one another. If this dependence extends to essential commodities (like food, armaments etc.) there is danger of shortage in times of war when communications become difficult. Also, a country having command over essential articles can squeeze other countries and obtain better terms of trade. International trade also leads to commercial rivalry and wars.

² Samuelson's article in *Readings in the Theory of International Trade*.

THE BALANCE OF PAYMENTS

The term Balance of Payments is used to denote the record of economic transactions (involving foreign payments) between one country and other countries. The Balance of Payments is shown in the form of an Account or Balance Sheet which enumerates *how much has been received* from foreigners and *how much has been paid* to them during a particular accounting period. Usually the accounts are prepared on an annual basis.

The Balance of Payments Account of a country shows, on its *credit side*, the different items for which it has received payment and the amount of such payments. These are called the Credit Items. On the *debit side* the Account shows the items for which the country has paid to foreigners and the amount of such payments. These are the Debit Items. If the total of the debit items and the total of the credit items are equal in value, the country's international payments are balanced. If the credit items are larger, so that there is a net balance due to it, the country is said to have a Favourable Balance. If the debit items are larger, so that there is a net balance due to foreigners, the country is said to have an Unfavourable Balance. The terms "favourable" and "unfavourable" are misleading but have the sanction of long usage.

The various items which make up a country's Balance of Payments Account can be listed as follows :

1. *Export and Import of Commodities.* Exports appear on the credit side of the accounts, imports on the debit side. These items are called the "Visible Items".
2. *Services Given and Received.* These includes—shipping, banking and insurance charges ; tourists' expenses ; cost of maintaining students abroad ; cost of diplomatic services, trade delegations, etc. ; profits of foreign companies ; interest charges on foreign loans etc. These items are called the "Invisible Items". They may appear on both the credit and the debit side of the accounts. Usually the net balance (*plus* or *minus*, as the case may be) is shown. Gifts, private and inter-governmental, tributes and indemnities, and similar payments between one country and another may be included within the invisibles or may be shown under a separate heading.
3. *Export and Import of Gold.* Formerly gold was the balancing item in international transactions. Deficits and surpluses were met by export and import of gold. Gold movements still occupy an important place in international transactions. Hence they are separately shown in the Balance of Payments Accounts.

4. *Capital Movements.* This item includes private and inter-governmental loan transactions and the export and import of shares and securities.

The Balance of Payments Accounts are usually shown in two parts: *the Current Account and the Capital Account.* The Current Account includes the items which have been listed above under paragraphs 1 and 2. These items are directly related to the national income of the country. They show the expenditure involved in obtaining goods and services from abroad and the income received by sale of goods and services to foreigners. The net balance from these items (*plus* or *minus*) must be added to or subtracted from the net national product of the country in order to find out its national income.

Movements of monetary gold (*e.g.*, transfers between Central Banks or between Governments) are usually shown separately in the Balance of Payments Accounts. Movements of non-monetary gold (*e.g.*, sale of gold by a gold-producing country) are usually included in the Current Account.

The Capital Account consists of all transactions relating to loans and investments. They are transactions relating to debts and to transfers of ownership. The Capital Account is usually divided into two parts, one including short-term movement of capital and the other including long-term movements. Short-term movements are those which are made by instruments of less than one year's maturity. All others are regarded as long-term movements.

The term Balance of Trade is used to indicate the balance on the commodities account, *i.e.*, the balance as regards item 1 of the above list. The term Balance of Payments is used to denote the overall position of the whole account relating to international transactions, *i.e.*, taking into consideration all the four items in the above list.

THE BALANCE OF PAYMENTS ALWAYS BALANCES

There are two major categories in the Balance of Payments Accounts of a country: (i) payments in respect of exports and imports (including visibles, invisibles and gold) and (ii) payments in respect of lending and borrowing. If during any period a country's exports are larger than the imports, the surplus will be held abroad in the form of debts due and owing to it. Similarly if imports are larger than the exports, the deficit is held in the form of a debt due and owing to foreigners.

Exports—Imports=Debts due *from* Foreigners.

Imports—Exports=Debts due *to* Foreigners.

The balance on the Export/Import Account must be equal and opposite to the balance on the Loan Account. The balance of Pay-

ments Accounts are kept in the form of a double entry book-keeping. Corresponding to every credit entry (export) there is a debit entry (loan). The total of the credit and the debit columns must be equal. This is what is meant by saying that the balance of payment always balances. *The statement is in the nature of a truism.* It must not be interpreted to mean that the international economic transactions of a country are always in equilibrium and that no country suffers from a balance of payments problem.

EXPORTS TEND TO EQUAL IMPORTS

The commodity exports and commodity imports of a country during a particular period of time may not be equal. But if we use the term exports in a wide sense to include all transactions for which a country *receives* payment and the term imports in a similar sense to include all transactions for which a country *makes* payments, we find that in the long run exports tend to equal imports. There are two theories regarding the process through which this equality is brought about (i) the Classical Theory and (ii) the Modern Theory.

Classical Theory. The Specie-Flow Mechanism. According to the Classical Theory, first developed by Ricardo, exports and imports are equalised through the monetary system. If one country has a deficit in its balance of payments it has to export gold to settle the balance. If a country has a surplus in the balance of payments, it receives gold from foreign countries. The gold movements bring about certain price changes which eventually eliminate the deficits and surpluses. The process is as follows. In the surplus country, gold comes in, money supply increases and the price-level rises. Higher prices check exports and increase imports. Thus the surplus balance tends to disappear. Since gold imports continue so long as there is any surplus, the rise of prices will continue until the whole surplus is eliminated. In the deficit country, there occurs a different type of change. A deficit country exports gold, its money supply decreases and as a consequence its price-level falls. Falling prices encourage exports and discourage imports. Thus the adverse balance tends to disappear. The fall of prices continues until the whole deficit is wiped away. *Thus no country can have a permanent deficit or a permanent surplus in its balance of payments.* The balancing process is complicated by capital movements and movements of foreign balances but eventually the equality between exports and imports is established.

The Classical Theory of the balancing process is based upon many assumptions. (i) It assumes the validity of the Quantity Theory of Money. Gold movements are supposed to affect money-supply and through it, the price-level. (ii) It assumes that the increase in the money demand caused by the influx of gold and increased money-

supply affects prices and costs but does not affect output and employment. (iii) It assumes that gold movements are not obstructed by deficit countries. (iv) It assumes that the gold standard is in operation in all countries.

The assumptions of the Classical Theory do not hold good in modern times. Therefore, the Classical Theory *cannot be used* now to explain why international payments tend to balance.

The Modern Theory. The Modern Theory of the balance of payments was developed by Mrs. Robinson and Harrod on the basis of Keynes' *General Theory of Employment*. The substance of the new theory is that *deficits and surpluses are eliminated through changes in employment, income and output*. "An external event which increases a country's exports will also increase imports *even without price changes*, since the change in exports affects the level of output and hence the demand for all goods." Suppose that country X imports more from country Y and that a deficit arises in X's balance of payments. Initially the deficit may be financed by movements of gold or short term balances but in course of time income and employment in the export industries of Y will expand, the demand for home goods will increase and there will occur an expansion of employment and income throughout the economy of Y. This will lead to increased effective demand for goods in Y and imports into Y from X will increase, thereby offsetting a part or perhaps the whole of the initial rise in exports.

According to the Modern Theory the balancing mechanism operates through changes in output and employment, *i.e.*, changes in the level of income. It is obvious that *this mechanism does not operate if the initial disturbance is of a type which does not directly affect the circular flow of income within a country*. Speculative capital transfer is an example of this type of disturbance.

The adjustment of the balance of payments through changes in the level of income *may not be complete*. The entire deficit or surplus may not be eliminated through this process. The induced changes in employment may be prevented or obstructed by inelasticity of factors of production and other reasons. When adjustment through income changes is not complete any one or more of the following methods have to be adopted to complete it—direct controls, changes in the terms of trade (or prices), and variations in the rates of foreign exchange.

CAUSES OF DISEQUILIBRIUM IN THE BALANCE OF PAYMENTS

From the accounting standpoint the balance of payment always balances because the balance of trade of a country must be equal and

opposite to the balance of lending. From the economic standpoint the balance of payments position of a country ceases to be in equilibrium when, during a certain period of time, *the total amount payable to foreigners on account of international transactions is not equal to the total amount receivable from them.* A disequilibrium in the balance of payments may be produced by any of the following causes :

1. There may be *quantitative changes in any of the items included in the balance of payments accounts*, viz., commodity exports and imports, invisible items, inter governmental transactions like payment of war-indemnities or relief payments, international loans and repayments of the same etc. Such quantitative changes may arise from a variety of reasons. Commodity exports and imports are affected by changes in the conditions of demand and supply. Purchase of shipping, banking and other services are similarly affected. The volume of inter-governmental transactions is influenced by the economic policy of the governments concerned and changes frequently. International loans and investments depend upon various economic and non-economic considerations and the volume of such transactions never remains stable.

2. *Changes in the price-cost structure* of a country's export industries affect the volume of exports and the balance of payments position. Increase of prices due to higher wages, higher prices of raw materials and/or inflation reduces exports. Fall of prices increases exports.

3. The balance of payments position may be affected by *speculative transfers of funds* from one country to another. Such transfers may occur if opportunities arise for earning higher interest in other countries. They may occur also from a fear of currency depreciation. If people apprehend that the currency of a country is about to fall in value they try to transfer their holdings of that currency into other currencies.

4. The balance of payments position is influenced by *fluctuations in the national income*. Changes in the national income lead to changes in the demand and supply conditions of the exports and the imports. Hence exports and imports change in volume and affect the balance of payments position.

5. The balance of payments position is affected by *changes in the rate of foreign exchange*. If the external value of a country's currency is increased, imports into it become cheaper and exports from it become dearer ; therefore, imports increase and exports decline. The reverse effects are produced when the external value is reduced.

CORRECTION OF ADVERSE BALANCE

A disequilibrium in the balance of payments is corrected, in the long run, through an automatic mechanism. The mechanism is according to the Classical theory, changes in prices and costs and according to the Keynesian theory, changes in the volume of employment and income. But certain steps may be taken to hasten the process of adjustment. They are as follows :

1. **Stimulation of exports.** Exports may be stimulated by the following methods (i) introducing better marketing (ii) reducing internal costs by lowering wages, increasing hours of work, or increasing the efficiency of labour (iii) bounties on exports and (iv) relief of taxes.

Increase of exports is equivalent to an increase of domestic investment. It increases income and employment and has an uplifting effect on the economy. Increase of exports first increases the income of the export industries. Subsequently all incomes increase through the operation of the foreign trade multiplier. (See below.) It is, however, not easy to increase a country's exports. Increase of exports depends on the foreign demand for the country's products, her competitive position in the international markets and the price-cost structure of her industries as compared with the price-cost structure of the competing countries.

2. **Reduction of imports.** Imports may be checked by various methods of which physical controls through licencing is most effective. The methods are—(i) tariff (ii) import quotas (iii) exchange control, etc. (See ch. 32).

Reduction of imports, is extensively practised by all deficit countries through various kinds of import control. The method may, however, produce harmful consequences. It may prevent a country from obtaining from abroad capital goods, raw materials and essential consumer goods, like foodstuffs. Import restrictions are primarily imposed on luxury goods. But the non-availability of luxury goods may produce consumer dissatisfaction and reduce the incentives to work and effort.

3. **Reduction of the external value of money.** The methods are—(i) exchange depreciation and (ii) devaluation. When the external value of a country's currency is reduced, imports into it become dearer and exports become cheaper. Therefore, imports tend to fall and exports tend to rise thereby reducing or eliminating the adverse balance of payments.

Devaluation is generally considered to be highly effective. But it has certain evil consequences. Devaluation makes foreign capital goods, raw materials and essential consumer goods more costly. High

cost of capital goods may, in the case of underdeveloped countries, retard their development. Also, devaluation has an inflationary effect on the economy. Reduction of the external value of money in due course leads to a fall in its internal value and a rise of the price-level. Devaluation does not always provide a permanent cure for a disequilibrium in the balance of payments. Devaluation increases exports because it reduces export prices but if the internal price cost level subsequently rises, the favourable effects will be wiped away. [There are certain other defects of devaluation. See next chapter.]

4. **Immediate Steps.** When adverse balance of payments becomes acute the following methods of corrections have to be adopted : (i) Export of gold (ii) Borrowing from the International Monetary Fund (iii) Gifts from friendly countries (iv) Borrowing from friendly countries (v) Selling securities from the reserves.

Conclusion. The measures to be adopted by a country for correcting a disequilibrium in the balance of payments should be determined after a careful analysis of the factors that have produced the disequilibrium. If the disequilibrium is caused by some structural maladjustment which hinders exports or favours imports, steps should be taken to correct the maladjustment.

Example : One of the reasons for India's adverse balance of payment is that she has to purchase various raw material and foodstuffs which, before partition, were available within the country. In this case the adverse balance may be reduced by increasing the local production of raw materials and foodstuffs.

If disequilibrium in the balance of payments is caused by monetary factors, e.g., inflation, appropriate measures must be adopted to counteract the effects. If disequilibrium is produced by an overvaluation of foreign exchange rates, the proper remedy is devaluation.

Example : In the case of India it has been argued by many economists that the rate of exchange fixed for the Rupee in 1926, Re. 1=1 sh 6d., was an overvaluation which seriously affected the export industries of India. This was one of the arguments used in support of the devaluation of 1949.

THE FOREIGN TRADE MULTIPLIER

The Foreign Trade Multiplier shows the effects of foreign trade on the national income. If exports from India increase by Rs. 1 crore her national income will increase, not by Rs. 1 crore only, but by more than Rs. 1 crore. The extent of the increase can be determined from the Foreign Trade Multiplier. The concept is explained below.

Suppose that exports from a country increase by E . This means that the export industries of that country have obtained an extra income of E . This income goes in due course to some workers as wages and to some entrepreneurs as profits. The national income increases by E . The income E will of course be used by the income-recipients. There are only three ways of using it, viz., (i) consumption of home produced goods, (ii) consumption of imported goods, and (iii) saving. The income E will therefore be partly spent on home produced goods, partly spent on imported goods and partly saved. Suppose that the marginal propensity to consume home produced goods is ' c '.

[' c ' is the fraction by which income must be multiplied to find out exactly how much is spent on the consumption of home produced goods. Thus if people use $1/5$ of their additional income to purchase such goods then $c=1/5$. If additional income is Rs. 1 crore, people will spend on home produced goods Rs. 1 crore $\times 1/5$ = Rs. 20 lakhs. ' c ' may be considered constant in the short period. See ch. 33.]

In the first stage, as soon as exports increase by E , the national income increases by E . Then, out of E , people spend on home produced goods $E \times c = Ec$. The income of the producers of such goods increases by Ec . Thus, in the second stage the national income increases by Ec . In the third stage people will spend out of Ec an amount equal to $Ec \times c = Ec^2$. The national income now increases by Ec^2 . In the next stage the national income will increase by $Ec^2 \times c = Ec^3$. This process will go on until the final increase of expenditure (and income) is too small to have any effect ($=0$). Thus an initial increase of exports by E finally increases the national income by an amount which is equal to the sum of the series.

$$E + Ec + Ec^2 + Ec^3 + \dots \text{to } 0$$

Because $c < 1$ the sum of this series is equal to $E \cdot \frac{1}{1-c}$. Thus the effect on the national income, of an increase of exports by E , is obtained by multiplying E by $\frac{1}{1-c}$. The expression $\frac{1}{1-c}$ is called the Foreign Trade Multiplier.

Suppose that $E = \text{Rs. 1 crore}$ and $c = 1/5$. The national income will increase by Rs. 1 crore $\times \frac{1}{1-1/5} = \text{Rs. 1 crore} \times 5/4 = \text{Rs. 1.25 crores}$.

The effects of a fall of exports can also be obtained from the multiplier. If exports fall by F , national income will diminish by $F \cdot \frac{1}{1-c}$. In this case the multiplier operates in reverse producing a multiple diminution of income.

The Foreign Trade Multiplier can be expressed in terms of the "marginal propensity to import" and the "marginal propensity to save". If the former is expressed by 'm' and the latter by 's' then $c+m+s=1$ because consumption of home produced goods, consumption of imported goods and saving must exhaust the whole of any additional income. From the above equation it follows that $m+s=1-c$. Hence, the Foreign Trade Multiplier is also equal

$$\text{to } \frac{1}{m+s}. \text{ Therefore, } \frac{1}{1-c} = \frac{1}{m+s}.$$

RECOMMENDED READINGS

1. American Economic Association, *Readings in the Theory of International Trade*.
2. Haberler, *The Theory of International Trade*.
3. Kindleberger, *International Economics*.
4. Meade, *Balance of Payments*.
5. A. C. L. Day, *Outline of Monetary Economics*, Chs. 28 & 29.
6. Samuelson, *Economics*, (9th edition), Ch. 34.
7. Benham, *Economics*, Chs. XXXIV & XXXV.
8. Cairncross, *Introduction to Economics*, Ch. 31.

EXERCISES

1. Compare international trade with domestic trade. Explain how international trade arises. (G.U. & D.U. '69; C.U. B.Com. '70).
2. State and explain the Theory of Comparative Costs. (C.U. B.Com. '66; Gau, B.A. '63; see C.A. May '72).
3. Discuss with suitable illustration the law of Comparative Costs. If country A is superior to country B in the production of two commodities, will country A gain by importing one of those commodities from country B? (C.U. B.Com. '64).
4. "Even without any movements of productive factors across national boundaries there will often result a partial (but not necessarily complete) equalisation of factor price from the free movement of goods in international trade." (Samuelson). Explain. (C.U. B.A. Hons. '62).
5. Discuss critically the theory of comparative costs. Can the theory be extended to more than two countries and two commodities? (C.U. B.Com. '68; B.A. '71).
6. Distinguish between Balance of Trade and Balance of Payment. What are the items which enter into a country's balance of payment? How is the balance of payments influenced by export or import of capital?
7. Analyse the nature of gains obtained from international trade. (Gau. B.A. '64; C.U. B.Com. '69; C.U. B.A. '72; see C.A. Nov. '68).

8. What is meant by balance of payments? What methods are generally used by a country to correct adverse balance of payments? (C.U. B.Com. '65; see C.A. May '70).

9. In what sense is it true to say that the balance of payments of a country must always balance? (C.U. B.A. '68).

10. What do you understand by the term 'balance of payments'? What methods can be adopted for correcting a disequilibrium in the balance of payments? (C.A. Final Nov. '73).

11. How far is it true to say that for any particular country it exports pay for its imports? (C.U. B.Com. '74).

12. What is meant by deficit in the balance of payments? How can it be made up? (C.U. B.A. '74).

CHAPTER 31

FOREIGN EXCHANGE

INTERNATIONAL PAYMENTS

International payment means payment by citizens of one country to those of another and payment by one Government to another. Such payments are necessary in international economic transactions like purchase of goods and services from abroad and international loans, investments and gifts.

The complexities of international payments arise from the fact that different countries use different kinds of money. When any international economic transaction takes place it becomes necessary to exchange one kind of currency for another. When an Indian sells some goods to an American he secures some Dollars. But Dollars are not legal tender in India ; they must be converted into Rupees before the seller can use the sale-proceeds in India.

The Foreign Exchange Market. Transactions involving international payments are carried on in what is called the Foreign Exchange Market. This market consists of banks and various kinds of dealers and brokers. The Central Banks and Governments of different countries participate in the market by buying and selling their domestic currencies for foreign currencies. In countries where there is exchange control they regulate the rates of foreign exchange and exercise general control over all foreign exchange transactions.

Bankers and dealers in the Foreign Exchange Market perform the following functions :

1. *They transfer purchasing power from one country to another and thereby provide for international payments.* The transfer of purchasing power can be made by various methods. Of them the most important are Bills of Exchange, Banker's Drafts and Telegraphic Transfers. A Bill of Exchange is a document drawn by the seller, directing the buyer to pay a certain sum of money to or to the order of the seller on a certain date or after a specified period of time. A Banker's Draft is an order by a bank upon another bank (which is its branch or agent) to pay a certain sum of money to a specified party. When a bank's order to pay money is communicated by telegram it is called a Telegraphic Transfer.

How purchasing power is transferred from one country to another can be illustrated by the following example. Suppose that X of Calcutta

has sold some goods to Y of London and has drawn a bill on Y for his dues amounting to £ 100. After the bill is accepted by Y it can be discounted by X with a foreign exchange bank in Calcutta. The Bank will pay to X the rupee value of the bill (calculated at the current rate of exchange) less the amount of discount. The bill will be sent to the London branch or agent of the Bank and £100 will be collected from Y on the due date. As a result of the transaction the sterling balance in the hands of the bank in London increases and its rupee balance in Calcutta is reduced. There will, however, be many transactions in the opposite direction. Englishmen selling goods to Indians will obtain sterling from a foreign exchange in London and the latter will receive rupees from Indian importers. These transactions will increase the rupee balance of the bank and reduce the sterling balances. In the case of Banker's Drafts and Telegraphic Transfers the result is substantially the same. *The bank collects moneys in one financial centre and pays out in another.* If the total payment due from India to U.K. is exactly equal to the total payment due from U.K. to India, the transactions between U.K. and India will all be settled through the foreign exchange markets of the countries. If the transactions between India and U.K. do not balance the difference may be adjusted by transferring the surplus of one country to meet the deficits of that country with other countries. Suppose that India has a surplus due from U.K. She can utilise this surplus for purchasing goods from France, Germany or any other country which requires sterling. Through the foreign exchange markets of the world such adjustments are readily brought about. A difficulty arises only when the total payment due from a country, taking all other countries together, is not equal to the total payment due to it.

2. *Bankers in the foreign exchange market provide credit.* International trading transactions are mostly done on credit. The discounting of a foreign bill of exchange amounts to giving a loan to the importer. Foreign exchange banks finance international trade. They also give information to the exporters regarding the position and standing of importers when necessary.

3. *The foreign exchange market provides for the "hedging" of exchange-risks.* Forward transactions take place in the foreign exchange markets. A person can buy foreign currency to be delivered after a period of time at a rate agreed upon on the date of the transaction. Forward purchases of foreign exchange avoid the risk of changes in the rate of foreign exchange.

If the foreign exchange accounts of all countries are balanced (*i.e.*, if for each country, the total payment due to foreigners is exactly equal to the total payment due from foreigners) international payments will be automatically cleared through the Foreign Exchange Market. But this does not happen. During a particular period, some countries

have a net balance due and others have a net balance payable. When the Gold Standard was in operation the net deficits and surpluses were met by export and import of gold. Nowadays the paper standard is in operation everywhere and gold movements are restricted. Deficits and surpluses are now adjusted by loans. A country with a net deficit must arrange for credit (with citizens of surplus countries or banks or international financial institutions like the I.M.F.) until it is able to reverse the position and acquire a surplus in its foreign exchange transactions. Drastic measures (like import control or devaluation) may be necessary for the purpose.

RATE OF FOREIGN EXCHANGE

The rate at which money of one country can be exchanged for the money of another country is called the Rate of Foreign Exchange. The term Foreign Exchange is sometimes used to denote any foreign money, as in the expression, "India requires more foreign exchange".

The rate of foreign exchange is determined differently under different exchange systems. Five possible types of exchange systems may be distinguished.

1. **Permanently stable rates of exchange.** Under an international gold standard, with fixed gold parities, the rate of exchange is more or less stable. It can vary within very small limits. This system was in operation in Western Europe and U.S.A. prior to 1914. (See p. 486).

2. **Freely fluctuating exchange rates.** The external value of the currency of a country under a paper standard can vary without limit in either direction if the Central Bank or the Government of the country does not interfere with the working of the exchange market. Some countries of Western Europe operated under this system for some time after World War I. (See pages 488-92).

3. **Flexible exchange rates.** Under this system the Government or the Central Bank does not interfere directly with the working of the foreign exchange market. There are no restrictions on international transactions. But the Government and the Central Bank try to keep the rate of exchange *pegged at a particular level* by purchase and sale of the domestic currency in terms of foreign currencies. This system was in operation in India between 1898 and 1913 and in many countries in Western Europe during 1936 to 1939. (See pages 494-95).

4. **Floating exchange rates.** This system has been operating recently. In some countries the exchange rate is permitted to change within certain limits for example, within 1 and 2 per cent. The change may be allowed within a year or by any other formula. This system may be called, "the crawling or the sliding peg". It is a

variant of flexible exchange rates. The £ was 'floating' since 24th June, 1972.

5. Exchange Control. Under this system the Government and the Central Bank keep the exchange rate fixed at a particular point. They control the foreign exchange market and no transaction involving foreign payment can be entered into without the permission of the authorities. After the outbreak of World War II most countries adopted exchange control. (See pages 495-98).

RATE OF FOREIGN EXCHANGE UNDER GOLD STANDARD

When the Gold Standard was in operation, the money in use was either made of gold or was convertible into gold at a fixed rate. The rate at which standard money of the country was convertible into gold was called the Mint Price of Gold. [In U.K. the rate was 1 oz. of gold = £ 3 17sh. 10½d.]

The rate at which two gold standard currencies would be exchanged for one another in the foreign exchange market depended normally on the mint price of gold of each. If £1 and \$4 were equal to the same amount of gold then the normal rate of exchange between sterling and dollars would be £ 1 = \$4. This rate was called the Mint Par of Exchange because it was calculated from the mint price of gold.

The Mint Par of Exchange was the normal or the basic rate of exchange under gold standard. But the actual rate in the foreign exchange market fluctuated above or below this rate according to the balance of payments position of the countries concerned. How the actual rate of exchange was determined can be seen from the following example.

Let us imagine the following case : (i) there are only two trading countries, U.K. and U.S.A. (ii) both are on gold standard, and (iii) the mint par of exchange between their currencies is £ 1 = \$4.

Suppose that in a particular year exports from U.K. are larger than imports into it. (The terms, exports and imports, are used in a wide sense to include all the credit and debit items in the balance of payments accounts). The difference between exports and imports will have to be paid by U.S. importers in gold. But transshipment of gold costs money (freight, insurance etc.). Suppose that the cost of sending gold, worth £ 1, from U.S.A. to U.K. is \$1. Then the U.S. importers will have to spend $\$4 + \$1 = \$5$ for getting £ 1. If they get Sterling (from banks or other sources) at a rate less than \$5 per £ 1, they will purchase the same. They will never purchase sterling at a rate higher than \$5 because the alternative of sending gold is cheaper. It follows that when the balance of payments is in favour of U.K. the rate of exchange will tend to move up from £ 1 = \$4 to £ 1 = \$5. It will never go beyond the latter rate. In the converse case, when the balance of

payments is against U.K., the rate of exchange will move in the opposite direction. U.K. importers will now be required to send gold to U.S.A. To get \$4 in U.S.A. it would be necessary to spend \$1 in transshipping gold. For an expenditure of £1, the U.K. importers will actually get $\$4 - \$1 = \$3$. The rate of exchange will tend to move down from $\text{£}1 = \$4$ to $\text{£}1 = \$3$.

If the international payments accounts of both countries are balanced, so that no country owes anything to the other, the necessity of transferring gold does not arise. In such a case the mint par of exchange ($\text{£}1 = \$4$) will also be the actual rate of exchange.

The example given above shows that the external value of the Sterling (under the conditions assumed) is normally \$4, the rate calculated from the mint price of gold. If the balance of payments position of U.K. is favourable the value of the Sterling tends to rise to \$5 (Mint Par + cost of transporting gold). If the balance of payments position of U.K. is unfavourable, the value of the Sterling tends to fall to \$3 (Mint Par - cost of transferring gold). When the upper limit is reached gold tends to be imported into U.K. and when the lower limit is reached gold tends to be exported from U.K. The two limiting rates of exchange ($\text{£}1 = \$5$ and $\text{£}1 = \$3$) are called the *Gold Import Point* and the *Gold Export Point* respectively. They are also known as the *Upper* and the *Lower Specie Points*.

The question arises, what determines the exact rate of exchange within the limits set by the Gold Points? The answer is found by considering the demand and supply conditions of the respective currencies. The demand for Sterling arises from the necessity of paying U.K. citizens and depends on the aggregate value of the credit items in U.K.'s balance of payments accounts. The supply of Sterling comes from what U.K. citizens have to pay to foreigners and depends on the aggregate value of the debit items in U.K.'s balance of accounts. When the demand for Sterling is greater than the supply of Sterling, the value of Sterling tends to go up. In the converse case it tends to go down. *The external value of Sterling, at any particular moment of time, will be that which equalises the demand for and the supply of Sterling in the foreign exchange market.* These principles apply to paper moneys also. The special feature of gold standard is that under it the rate of exchange cannot go beyond the limits set by the Gold Points. Under a paper standard, the rate of exchange can move up or down without any limit.

RATE OF FOREIGN EXCHANGE UNDER A PAPER STANDARD

Under a paper standard, the money in use is not officially convertible into gold and therefore there is no mint par of exchange. If there is no control over the foreign exchange market, the rate of foreign exchange can vary without limit.

Two theories have been put up to explain how the rate of foreign exchange is determined in uncontrolled money markets when one or both the currencies are inconvertible paper moneys. They are (i) The Purchasing Power Parity Theory and (ii) The Balance of Payments Theory.

THE PURCHASING POWER PARITY THEORY

According to the Purchasing Power Parity Theory, the external value of a currency depends on its *internal purchasing power*. According to Gustav Cassel, the rate of exchange between two currencies, *"must stand essentially as the quotient of the internal purchasing powers of these currencies"*.

Suppose that Re. 1 can buy X units of goods in India and the same units of goods (in quantity and quality) can be purchased in U.K. for 18d. Then Re. 1 must be equal to 18d. If at any particular time the value of the Rupee in the exchange market rises above 18d., English exporters will gain by sending goods to India, English prices will move up and Indian prices will move down. In the converse case, exports from India to U. K. will increase, Indian prices will rise and U.K. prices will fall. Ultimately the rate of exchange between the £ and the Re. will be *equal to the ratio between the purchasing power of each*. Since the purchasing power of a currency varies inversely with the price level in the country, the ratio between the purchasing powers of two currencies must also be equal to the *inverse of the ratio between the price levels of the two countries*. Hence, the purchasing Power Parity Theory leads to the following result :

$$\frac{\text{£ 1}}{\text{Re. 1}} = \frac{\text{Purchasing Power of £}}{\text{Purchasing Power of Re.}} = \frac{\text{Price level in India}}{\text{Price level in U.K.}}$$

The rate of foreign exchange, as calculated from the ratio between the purchasing power of two currencies, is called the *Purchasing Power Par*. The Par is a moving Par because the purchasing power of a currency changes frequently. Nevertheless, according to the Purchasing Power Parity Theory, the Purchasing Power Par is the normal or basic rate of exchange between two currencies. According to the Theory the exchange rate between two currencies always tends to be *directly proportional to their respective purchasing powers and inversely proportional to the price levels in their countries*.

Criticisms. The purchasing power parity theory is not accepted nowadays for the following reasons :

1. The purchasing power of a currency can be calculated in terms of the *internationally traded goods* or in terms of *all goods*, domestic and international. If purchasing power is calculated in the former way the theory amounts to a truism, for internationally traded

goods must have the same price level if there is competitive trade and absence of control. If purchasing power is calculated in the second way the theory is not correct. Cassel argued that in the long run the prices of domestic goods are influenced by the prices of other goods but the correspondence has not been found to be accurate.

2. According to Haberler,¹ the Purchasing Power Parity Theory *cannot be applied to absolute levels of prices but only to changes in price levels*. The absolute level of prices depends on various factors, some of which have no relevance to international trade (e.g., prices of domestic goods). But a change in the price level may have effects on international trade and on the rate of foreign exchange. Thus a rise in the price level by 5% may lower the external value of a currency by about 5%. Gustav Cassel² stated that, "it is only when we know the exchange rate which represents a certain equilibrium that we can calculate the rate which represents the same equilibrium at an altered value of the monetary units of the two countries".

3. The theory fails to account for changes in the rate of exchange which occur as a result of *capital movements and loan transactions*. When capital is being transferred to a country the foreign demand for its currency increases. So its exchange rate goes up. But its internal purchasing power is not affected immediately.

4. *A change in the price level will not affect the exchange rate if the terms of trade change proportionally*. Suppose that the price level in a country falls by 5% as a result of technological improvements. Suppose that the terms of trade simultaneously become more favourable to that country so that there occurs no fall in the aggregate value of the export trade of the country. In this case the foreign exchange market will not be affected. The rate of foreign exchange will not change even though there has occurred a change in the price level.

5. If the demand for a particular commodity increases suddenly there will be increased demand for the currency of the countries supplying it and a rise in the rate of exchange. Such increases cannot be attributed to or connected with any change in the internal price level of the countries concerned.

Conclusion. The Purchasing Power Parity Theory is true under special conditions, viz., when there are no capital movements or loan transactions and no change in technological conditions or the terms of trade. Change of purchasing power is a factor that influences the rate of exchange but it is only one of many factors. The Theory is incorrect as a general explanation of exchange rates. Metzler³ calls

¹ G. Haberler, *The Theory of International Trade*, p. 25.

² G. Cassel, *Money and Foreign Exchange after 1914*, p. 142.

³ Metzler in *A Survey of Contemporary Economics* (Ellis), Ch. VI.

it a "distorted" theory. "Even at the height of its popularity, the parity theory was a target of severe criticism and eventually it was almost completely discredited."

Use of the Purchasing Power Parity Theory. In the absence of abnormal circumstances, like capital movements etc., the rate of foreign exchange tends to change in proportion to the relative changes in purchasing power. Hence the theory can *indicate what is the equilibrium rate of exchange, at least in normal times.* For this purpose it is necessary to prepare accurate index numbers of prices in different countries and find out the ratios between the price levels.

If it is known or assumed that the rate of exchange between two currencies was in equilibrium in a certain year, we can *calculate the equilibrium rate of exchange* between the two currencies for a different year with the aid of the Purchasing Power Parity Theory. The following example illustrates the method.

The rate of exchange between the Rupee and the Sterling was Re. 1=1 sh. 4d. in 1913. If we assume that this rate was the equilibrium rate in 1913, we can evaluate the equilibrium rate for a subsequent year (say) 1926 with the aid of the Purchasing Power Parity Theory as follows :

$$\frac{\text{Rate of Exchange in 1926}}{\text{Rate of Exchange in 1913}}$$

$$= \frac{\text{Price-level in India in 1926}}{\text{Price-level in India in 1913}} \div \frac{\text{Price-level in U.K. in 1926}}{\text{Price-level in U.K. in 1913}}$$

$$= \frac{\text{Price-level in India in 1926}}{\text{Price-level in India in 1913}} \div \frac{\text{Price-level in U.K. in 1926}}{\text{Price-level in U.K. in 1913}}$$

$$= \frac{\text{Proportional change in Indian prices, 1926-1913}}{\text{Proportional change in U.K. prices, 1926-1913}}$$

∴ the equilibrium rate of exchange between Rupee and Sterling in 1926

$$= \text{the rate in 1913} \times \frac{\text{Proportional change in Indian prices, 1926-1913}}{\text{Proportional change in U.K. prices, 1926-1913}}$$

THE BALANCE OF PAYMENTS THEORY OF THE EXCHANGE RATE

The rate of foreign exchange measures the external value of a country's currency. If Re. 1=1sh. 6d., then Re. 1 can purchase 1sh. 6d. of British money. *Hence, the rate of foreign exchange is the price of a currency in terms of foreign currencies.* According to the Balance of Payments Theory the rate of foreign exchange is, like other prices, *determined by demand and supply.*

The demand for the currency of a country is equal to the amount necessary to pay for goods and services purchased from it plus the

balances to be sent to it for investment or loans. The *supply* of the currency of a country is equal to the value of the goods and services purchased by that country plus the balances it is willing to send outside for loans and investment. At any particular time the rate of foreign exchange must be such as to *equate the demand for and the supply of the currency concerned*.

Diagrammatic Representation of the Balance of Payments Theory.

In Fig. 71, Rupees are measured along OY and foreign exchange (foreign currencies) along OX.

The demand for foreign exchange by India can be represented by a downward sloping line like DD_1 . The reason is as follows. Suppose that the value of the \$ in terms of Rupees falls from Rs. 5 to Rs. 4. This will make American goods cheaper in India. More American goods will then be purchased and India will demand more American currency. Thus if the value of foreign exchange falls, more foreign exchange is purchased. This is shown by the downward slope of DD_1 .

For similar reasons, the supply of foreign currency can be represented by an upward sloping line like SS_1 . Suppose that the value of the \$ rises from Rs. 5 to Rs. 6. This will make Indian goods cheaper to American buyers. They will buy more Indian goods and for this purpose supply more of their currency.

The two curves, DD_1 and SS_1 , intersect at R. When the rate of exchange is RF Rupees=OF Foreign Exchange, the demand for and the supply of foreign exchange in terms of the home currency are equal. Hence this will be the rate of exchange in the foreign exchange market.

The shape of DD_1 and SS_1 depend upon the following four elasticities :

- (a) The foreign elasticity of demand for exports
- (b) The home " " supply " "
- (c) The foreign " " " imports
- (d) The home " " demand " "

These elasticities determine the conditions of exchange stability. According to Ribinson and Metzler, the exchange rate tends to remain stable if the demand elasticities are high and the supply elasticities are small.

In free and uncontrolled economies, the rate of exchange is determined from day to day by the supply and demand conditions of the

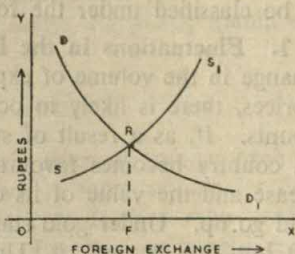


FIG. 71

home currency and the foreign currencies. As Robinson⁴ puts it: "Any change in conditions of demand or supply reflects itself in a change in the exchange rate, and at the ruling rate the balance of payments balances from day to day or from moment to moment."

FLUCTUATIONS IN THE RATE OF EXCHANGE

The causes that produce fluctuations in the rate of foreign exchange can be classified under the following headings :

1. **Fluctuations in the Balance of Trade.** Whenever there is a change in the volume of exports or imports or in the terms of trade or prices, there is likely to occur changes in the balance of payments accounts. If, as a result of such changes, the balance of payments of a country becomes favourable the demand for its currency would increase and the value of its currency in the foreign exchange market would go up. Under gold standard it would go up to the gold import point but not beyond it. Under the paper standard it can go up indefinitely. In the converse case, when the balance of payments is adverse, the external value of its currency will go down.

The volume of exports and of imports depend upon a variety of factors. They depend upon (i) taste and preferences of consumers in different countries (ii) production techniques and the resources available (iii) costs and income at home and abroad and (iv) the level of money wages and of effective demand. All these factors may change and thereby cause changes in the rate of foreign exchange.

2. **Stock-exchange influences.** International loans, payments of interest, repayment of principal, and foreign investments affect the demand and supply of particular currencies and influence the rate of exchange. Whenever, on balance, a country is entitled to receive money on current account, the demand for its currency increases and the external value of the currency tends to rise. In the converse case, when the country has a debit balance in the current account, the external value of its currency tends to fall.

3. **Banking influences or the Rate of Interest.** Higher rates of interest in a country attract balances to it for short term or long term investment and produce the same effects as a credit item in the current account.

4. **The state of confidence.** Lack of confidence in a particular country or a particular currency makes people eager to transfer money elsewhere. The supply of the currency increases and its value tends to fall. In the converse case, there is a transfer of funds to the country and the value of its currency tends to rise.

⁴ Robinson, *Essays in the Theory of Employment*, pp. 188-201.

Limits to Fluctuations. Under gold standard the exchange rate cannot vary beyond the Specie Points because beyond those points people will settle their transactions by the actual transshipment of gold. Under paper standards the rate can vary without limit because there is no universally accepted medium of payment through which transactions can be settled. When the rate of exchange is under government control, the rate cannot vary beyond the permitted limits, if the control operations are efficiently carried out.

Control of Fluctuations. See *post* under Exchange Stabilisation and Exchange Control.

FORWARD EXCHANGE

In free markets there are usually two rates of foreign exchange, a 'spot' rate for immediate transactions and a 'forward' rate for future transactions. The latter is very convenient to traders who wish to avoid the risks of exchange fluctuations. Forward exchanges can be obtained from banks and other intermediaries who deal in foreign bills. Sometimes the banks and intermediaries have to borrow money at foreign centres in order to provide foreign exchange. Hence the difference between the 'spot' rate and the 'forward' rate depends on two factors : (i) the expected future course of the exchanges and (ii) the cost of borrowing in the two countries.

THE EQUILIBRIUM RATE OF FOREIGN EXCHANGE

Under gold standard conditions, the mint par is the basic rate of exchange, within small limits of which the actual rate of exchange varies. The mint par can therefore be called the equilibrium rate of foreign exchange under gold standard. Under the paper standard the ratio of purchasing powers may be called the equilibrium rate if we accept the purchasing power parity theory. But the theory is not accepted nowadays because the rate of exchange is not determined by relative prices alone but by all other forces which determine the demand for and supply of a currency in the foreign exchange market. According to the Balance of Payments Theory, the rate of foreign exchange equalises demand and supply at a particular time. The rate is "stable", provided certain conditions are fulfilled regarding the elasticities of demand and supply for exports and imports and the balance of lending. A rate of exchange which fulfils the conditions of stability may be called the equilibrium rate of foreign exchange according to modern views. But this definition is not suitable for practical purposes because the relevant elasticities cannot be satisfactorily measured.

For practical purposes (for example, to find out when a country suffers from what is called "fundamental disequilibrium" in the rules

of the International Monetary Fund) the definition suggested by R. Nurkse⁵ is more useful.

According to Nurkse the equilibrium rate of foreign exchange is "*that rate which over a certain period of time keeps the balance of payments in equilibrium.*"

The "period" contemplated must not be too small (1 day or 1 week) ; we should allow for seasonal fluctuations within a year ; and for cyclical fluctuations. This gives us a period of 5 to 10 years. In most countries there exists some arrangement for settling international trade claims arising within the standard period. It is usually the central reserves of international means of payment consisting of gold, foreign exchange or international borrowing facilities. If the balance of payments remains stable, there will be no change in the volume of the reserve. The definition of equilibrium rate can be restated as follows : "The equilibrium rate is that rate at which over a certain period there would be no net change in the country's reserve of international means of payment."

EXCHANGE STABILISATION BY INTERVENTION

When the currency of a country is not based on gold, the free play of economic forces leads to fluctuating exchanges which disturb trade and affect the country's economic policy in various ways. Exchange fluctuations can be avoided (i) by *state intervention* in the foreign exchange market and (ii) by *state control* over foreign exchange transactions. Both these methods may be included within the term Exchange Control. Thus there are two types of Exchange Control (i) by intervention and (ii) by restriction.

Before World War II state intervention was the usual method adopted for avoiding fluctuations in the rate of foreign exchange. It took place in the following way :

1. A particular rate was declared as the official exchange rate for the currency. The rate chosen depend on the monetary and economic policy followed by the country at the time. Some countries deliberately over-valued their currency (*i.e.*, put a value on it which was higher than what it would have had in the market without management). Over-valuation was advantageous for certain purposes (*viz.*, securing foreign goods, particularly munitions of war, cheaply ; repaying foreign debts ; or, maintaining the country's prestige in international markets). But over-valuation was harmful to exports. Some countries deliberately undervalued their currency with a view to encouraging exports and discouraging imports. Other countries valued their currencies as far as possible at the figure which equalised demand and supply over a long period and tried to prevent short term fluctuations.

⁵ Article in *Readings in the Theory of International Trade*.

2. The market rate of exchange was made to correspond to the official rate by official sale and purchase of the country's currency and/or gold and foreign exchange. Whenever the market rate tended to rise the home currency was sold, whenever it tended to fall foreign currencies were supplied. There was usually a small difference between the purchase and sale rates within which the exchange dealers operated. In India, for example, the sale rate of rupees was, during 1898-1913 1sh. 4-1/8d. and the purchase rate was 1sh. 3-29/32d.

3. Some countries kept a special reserve containing gold, foreign currencies and their own currency with which to operate on the exchanges (e.g., the Exchange Equalisation Fund of Great Britain).

In India from 1898 to 1913 the value of the rupee was kept within small limits round 1sh. 4d. by unlimited purchase and sale of rupees in terms of sterling. Operations of this type are called "pegging the exchanges."

4. Apart from the purchase and sale of currencies, the monetary authorities did not interfere with the foreign exchange market. There were no restrictions upon exchange transactions.

The efficiency of exchange management depended on the extent of funds with which the operations were conducted and the strength of the economic forces affecting the rate of exchange. The method of pegging tended to break down during crises and panics (e.g., in India in 1907-8 and 1918-19). In modern times the situation is so abnormal that all countries have abandoned the method described above and have adopted full control over exchange transactions. This is known as Exchange Control.

EXCHANGE CONTROL

Definition. Exchange Control of the restrictive type, found in modern times, involves *complete control over all transactions involving foreign payments and receipts*. Under the Restrictive Exchange Control, private citizens are not allowed to enter into any transaction involving payment to foreigners or receipt of funds from foreigners without the permission of the monetary authorities. When any transaction involving foreign exchange is permitted it must be done at the rates prescribed by the authorities. So all foreign payments and receipts are under control as regards *extent, direction and rate*.

Motives. Exchange control may be adopted with many different purposes or objectives in view. The usual objectives are described below.

1. *To stabilize the rates of exchange:* Fluctuating exchange rates are harmful to trade and particularly disturbing during war time. Under exchange control conversion into foreign currency is required to be done at the officially fixed rates. So the rates of exchange remain stable.

2. *To prevent export of capital, gold and essential goods* : Under exchange control, funds cannot be sent outside without the permission of the controlling authorities. So export of capital can be prevented. Exchange Control is associated with trade control. So the exports of gold, capital goods and other essential goods can also be prevented.

3. *To ensure essential imports* : When there is exchange control, the authorities decide what goods are to be imported. Permission, through licence, is given only for the import of essential goods. The foreign exchange resources obtained from exports are not allowed to be wasted on unnecessary imports.

4. *To secure bargaining power in foreign trade* : If there is exchange control, a country possessing scarce commodities can arrange for their export to selected countries on favourable terms. Exchange control gives a monopoly power which can be used to secure essential goods at cheap rates. It can also be used to exploit other countries.

5. *To secure balance of payments* : Through strict exchange control imports can be checked and exports sold on favourable terms thereby remedying adverse balance of payments, if any. Exchange control is thus an alternative to the orthodox methods of curing imbalance, deflation and devaluation.

6. *To assist central planning* : Exchange control may be used as an instrument of planned economy to obtain essential goods, prevent exports of raw materials and secure desirable types of foreign investment.

Methods. Under Exchange Control, *all foreign economic transactions are required to be done with the permission of the authority appointed for the purpose.* Usually the Central Bank of the country is entrusted with the work of exchange control. The official authority is given the following powers :

(i) to compel all nationals of the country to surrender their holdings of foreign exchange, however acquired, to the official authority ;

(ii) to direct exchanges at particular rates (there may be multiple rates for the same currency as in pre-war Germany) ;

(iii) to limit or prohibit particular types of transaction, including transfer of securities ;

(iv) to regulate the value of each type of foreign transaction ; and,

(v) to determine the direction of foreign transactions, *i.e.*, to lay down rules regarding the countries with which a particular type of transaction can be entered into.

For exchange control operations certain subsidiary measures are required and usually adopted. They are as follows.

1. *Trade Control with Licencing* : Imports and exports are not allowed unless the parties obtain a licence from the authorities. Each licence lays down the maximum amounts that can be exported or

imported under it, and usually also fixes the country or area with which transaction is to be made. Imports from "hard currency" areas are avoided. Exports to them are encouraged.

[**Hard Currency.** Hard Currency means the currency of any country with which the country under consideration has an adverse balance of payments in current transactions. The Swiss *franc* is a hard currency for India because with Switzerland, India has an adverse balance and therefore Swiss *francs* are hard to get. Other currencies are either "Soft" (easy to get) or "Medium".]

2. *Freezing or Blocking of Particular Accounts* : It is sometimes necessary to prevent the owners of certain accounts from withdrawing the moneys lying in them and using for any purpose or converting them into any other currency. The object is to prevent export of funds. A part of India's Sterling Balance were frozen by U.K. in 1947.

3. *Clearing Agreements with Particular Countries* : Under this arrangement transactions between the home country and a specified foreign country are settled through the central banks of the two countries. Sometimes private traders are allowed to make their own arrangements for exchanging goods subject to overall monetary ceilings, which are so fixed that the payments to and from are more or less equal (e.g., under the Indo-Pakistan Trade Agreement of 1949). The payments due to one country accumulates in the Central Bank of the other and are finally set off against each other. Sometimes there is a *Payments Agreement* which provides that at the end of stipulated periods the balance due to one country will be paid in gold or in the currency of an acceptable third country (e.g., the Indo-Pak Payment Agreement of 1948). Sometimes there are arrangements for multiple clearing among more than two countries (e.g., the Organisation for European Economic Co-operation and the European Payments Unions, 1950).

4. *Avoidance of exchange-smuggling* : Attempts are frequently made to transfer funds to foreign countries through devices like invoicing exported goods at prices lower than actual prices and collecting and keeping the balance in the foreign country. The process is called Exchange Smuggling. Government, with police and the Exchange Control Authorities, has to take steps to prevent this.

Criticisms of Exchange Control. Exchange control has become a normal feature in the economy of every country in the post-war world. In communist countries like U.S.S.R. or China, the State must control exchange and trade because it controls all instruments of production and distribution; but in other countries exchange control is a disagreeable necessity brought about by war and post-war economic conditions. Scarcity of essential goods, protection of internal resources from exhaustion, and the need of capital goods for develop-

ment or reconstruction are three important reasons why exchange control persists. But, like other forms of control, exchange control, suffers from various defects which can be summed up as follows :

1. Exchange control *involves restriction of trade* which is harmful for all countries.

2. The administration of controls being in the hands of Government servants, there is a *danger of inefficiency, red-tapism, and corruption*. Badly administered controls may produce effects worse than the possible evils of an uncontrolled exchange market.

3. *Black markets in foreign exchange* exist even in countries where controls are administered with honesty and efficiency, e.g., U.K.

4. *Exchange-smuggling* and export of capital can take place even under strict controls. It is very difficult to prevent low-invoicing of exports by private arrangement.

5. The methods of management of exchange control or the objective pursued in a particular country may create *lack of confidence* in other countries and thereby cause *reduction of trade*.

6. Exchange control may be used as an *instrument for the furtherance of imperialistic designs*. It can also be used for deliberately *causing injury* to particular countries or groups of countries.

Conclusion. The general opinion among economists is that exchange control with other forms of control should be gradually relaxed so that in course of time there may be uncontrolled *multi-lateral trade* and *multilateral convertibility*. The International Monetary Fund and the International Trade Organisation were created with the object of securing uncontrolled exchange and trade. But the objects are not likely to be fulfilled in the near future.

EXCHANGE DEPRECIATION AND APPRECIATION

In the foreign exchange market, the rate of exchange of each currency, in terms of other currencies, fluctuates according to the demand and supply conditions. Formerly, when there was no exchange control, such fluctuations were often large and produced sizeable effects on the international trade of the countries concerned.

The term Exchange Depreciation is used to denote a *fall* in the rate of exchange of a currency *in terms of other currencies*. A *rise* in the rate, in terms of other currencies, is called Exchange Appreciation. (Exchange depreciation produces more or less the same effects as Devaluation. See below.)

DEVALUATION

Definition. Devaluation means a reduction of the value of a currency in terms of *gold*. Sometimes the extent of devaluation is

announced in terms of a currency which is regarded as equivalent to gold, e.g., the Dollar. Changes in the gold or dollar value of a currency are made by the currency authorities of the country, usually after consultation with and approval by the International Monetary Fund. "Devaluation usually refers to a change in a currency's value relative to gold, and usually to a notable and rare event of some magnitude rather than a day-to-day fluctuation." (Samuelson). The Rupee was devalued in terms of gold and the Dollar in 1949 and 1966.

Effects of Devaluation. The effects of devaluation are summarised below.

1. *Prices of foreign goods and services are increased.* Prior to the devaluation of the Rupee in 1966, 1 \$ was equivalent to Rs. 4.76. After devaluation, 1 \$ is equivalent to Rs. 7.50. An American product costing 100 \$ could have been purchased by an Indian, prior to devaluation, at Rs. 476. After devaluation it costs Rs. 750. Thus, as a result of devaluation, the prices of imported goods rise. Rise of prices reduces demand. Therefore devaluation reduces imports.

A consequence of the rise of import prices is that industries using foreign components try to replace them by local products. This is known as *Import Substitution*. The same effect is produced as regards consumption goods.

2. *Exports become more profitable.* Prior to the devaluation of 1966, an Indian exporter who sold 100\$ worth of goods in U.S.A. would have obtained Rs. 476. After devaluation, he gets Rs. 750 for the same amount of goods. If the exporter wishes he can reduce his foreign price and still get Rs. 476 or more. Thus the competitive power of exporters increases. They can reduce prices and still make normal profits. Reduction of price increases sales. Therefore devaluation leads to expansion of exports. More investment occurs in the export industries and employment increases.

3. Reduction of imports and expansion of exports produce a *favourable effect on the balance of payments situation*. The actual effect on the balance of payment position depends on the amounts by which exports increase and imports fall. Under certain circumstances exports and imports may not change appreciably. (See below.)

4. Devaluation *promotes investment* in the country by foreigners, because they get more local currency in exchange of their money after devaluation. For the same reason more *tourists are attracted* into the country. Thus invisible exports are increased. Also, *export of funds from the country is discouraged* because less foreign currency is received after devaluation.

5. *Devaluation raises the price level.* This is due to (i) rise in the prices of imported goods, and (ii) increase in the cost of production of local manufactures which use foreign components (raw materials) or

foreign tools and machinery. The price level, however, does not rise in the same proportion as the rate of devaluation. The reason is that devaluation does not raise all prices but only some prices, viz., those of foreign goods and of those local goods which are produced with foreign components.

6. Devaluation causes *loss to the foreign holders* of the devaluated currency, because the gold value of their holding is immediately reduced. The Indian devaluation of 1966 caused great loss to the holders of the so called Gulf Rupees. (Rupees hoarded in the Persian Gulf States). For this and other reasons, devaluation causes some *loss of prestige* for the country concerned. Foreigners are apt to distrust the financial integrity of such a country and become disinclined to give credit to it.

7. Devaluation increases the *burden of repayment* of, and the *interest charges* on, foreign loans.

8. The price level of exports decline as a result of devaluation and therefore the Terms of Trade move against the devaluating country.

Items 1 to 4 above are the favourable effects and items 5 to 8 are unfavourable effects or the disadvantages of devaluation.

Devaluation and the Balance of Payments. Regarding the effects of devaluation on the exports and imports of the devaluating country, the following points are to be noted.

1. Devaluation encourages exports and discourages imports. But the amounts by which imports fall and exports increase, depend on (i) the extent of devaluation and (ii) the elasticities of demand of the commodities concerned. Obviously if the imports of a country consist mainly of essential goods like foodgrains, the imports cannot fall much. Higher prices will in such cases force the importing country to pay more in the aggregate than before. Conversely if the demand for a country's exports is inelastic exports will not rise much and the exporting country may receive less money in the aggregate than before. Devaluation in such cases aggravates the balance of payments problem.

2. Since a country's exports and imports consist of many commodities, the demand for some of which is elastic, the net effect of devaluation is usually to encourage exports and discourage imports. Devaluation therefore, is the standard remedy for continuous adverse balance in international payments. The rules of the International Monetary Fund provide that variations in the exchange rate could be made to correct any "*fundamental disequilibrium*". Such disequilibrium may be presumed to exist when the balance of payments tends to be continuously unfavourable. But devaluation cannot be used repeatedly for that will destroy the confidence of traders in the currency concerned and ultimately affect the trade of the country more seriously.

3. Devaluation is the appropriate remedy for countries suffering from a chronic or structural disequilibrium in the balance of payments. "As a remedy for such persistent strains, it can scarcely fail, given time to produce the desired effects".

4. It can be shown that if the exchange rate of country's currency is depreciated by 1%, the percentage change in its balance of trade will be $e(h) + e(f) - 1$, where $e(h)$ is the home consumers' elasticity of demand for imports and $e(f)$ is the foreign consumers' elasticity of demand for home goods.

5. Exporters earn more after devaluation. Therefore devaluation, like exchange depreciation, operates as a "Bounty on exports". But the extra earnings disappear if costs of production rise to the same extent as the fall in the exchange value.

6. A fall in the external value of a currency is generally followed by a fall in its internal value. Internal prices and wages rise and therefore costs also rise. Sometimes internal prices rise first and is followed by fall in the exchange rate. In either case the exporter gains so long as the fall in the exchange rate is more than the rise in the internal costs. Cases are conceivable when the rise in internal costs is more than the fall in the exchange value. In such cases the export prices rise more than what they were before and the volume of exports fall, causing loss to the exporters. Usually, however, when exchange rates are falling, internal costs do not rise in the same proportion immediately, because wages are 'sticky' and raw materials are purchased under earlier contracts. So long as this 'lag' continues exporters gain.

Causes of Devaluation. When is Devaluation Justified? The different possible situations under which devaluation is justified, or is forced upon a country, are summarised below.

(i) When a country suffers from *continuous adverse balance of payments*, it is justified in taking recourse to devaluation. Under the rules of the International Monetary Fund, devaluation is approved as a method of correcting a *fundamental disequilibrium* in the country's trade.

(ii) *Inflation* may produce a divergence between the internal and the external value of country's currency. If the internal price-cost structure of a country is on a higher level than the price-cost structure of its rivals in the world market, the competitive power of its exporters is affected and exports are reduced, thereby creating or aggravating the balance of payments problem. India found herself in this situation in 1966. One of the remedies of this situation is devaluing the currency to a more realistic level, corresponding to the real purchasing power of the currency.

(iii) Devaluation is sometimes recommended as an *anti-depression measure*. During the Great Depression of the 1930's some coun-

tries deliberately depreciated the foreign exchange value of their currencies with a view to increase their exports at the cost of those of other countries. This policy is known as the Beggar My Neighbour Policy. It may produce some temporary advantages. The other countries usually do not submit tamely to this policy. They adopt retaliatory measures like equivalent or greater exchange depreciation, heavy customs duties etc. So in the long run the policy produces no advantages and is inimical to the country following it.

(iv) Devaluation can sometimes be justified as a *protective measure*. For example, when Great Britain devalued the Sterling in 1949, India had to devalue the Rupee. If she had not done so, her export trade in the Sterling area would have been seriously affected. The greater part of India's export trade is in the Sterling area and her rivals in that area had devalued their currencies, following the devaluation of the Sterling.

RECOMMENDED READINGS

1. American Economic Association, *Readings in the Theory of International Trade*.
2. Halm, *Economics of Money and Banking*, Chs. 38-42.
3. Kindleberger, *International Economics*.
4. Samuelson, *Economics*, (9th edition), Ch. 33.
5. A. C. L. Day, *Outline of Monetary Economics*, Chs. 30-36.

EXERCISES

1. Explain how the rate of exchange between two currencies is determined. (C.U. B.A., '62).
2. Explain what you mean by the foreign rate of exchange of a currency. What influences this rate? (Gau. B.A., '62, '65).
3. What factors influence changes in foreign exchange rates? Indicate the relevance of the purchasing power parity theory in the contexts. (G.U. and D.U. '67).
4. Critically examine the purchasing power parity theory. Is that theory entirely useless to-day? (C.U. B.A. '68).
5. What do you mean by Exchange control? What is the utility of Exchange control? (C.U. B.Com. '72).
6. Discuss the principal aims and methods of exchange control. (Mysore B.Com. 1968).
7. Explain the circumstances which have led to the adoption of exchange control in recent times. What are the objectives of such exchange restrictions? (C.U. B.Com. 1963; See C.A. May '71).
8. What do you understand by "devaluation of a Currency"? How is devaluation expected to correct an adverse balance of payments situation in a country? (C.U. B.A. '71).

9. Write short notes on devaluation. (C.U. B.Com. '65, '66, '72).
10. What is devaluation? Under what circumstances would you advocate the devaluation of a country's currency? (Mysore, B.Com. '67).
11. Explain the effects of lowering the external value of a country's currency on its balance of payments and domestic economy. (See C.A. Final May '69, '72).
12. What do you understand by 'devaluation' of a currency? Examine the effects of devaluation on the balance of payments. (C.U. B.Com. '73).
13. Explain the Purchasing Power Parity Theory. Point out its limitations. (C.A. Final May '73).
14. How is the exchange rate of a country determined? Explain the meaning of devaluation and its effects on exports and imports. (C.U. B.A. '74).

CHAPTER 32

COMMERCIAL POLICY

OBJECTIVES OF FOREIGN TRADE CONTROL

Nowadays almost every country controls its foreign trade. Restrictions are imposed on goods that can be imported and exported. Discrimination is practised as regards the countries with which trade is allowed. Imports from particular countries or currency areas are discouraged. Those from other countries and currency areas are encouraged. As regards exports the general policy is towards expansion. But usually foodstuff and essential raw materials are not allowed to be exported.

Control over foreign trade is considered to be necessary for the following purposes.

1. Avoidance of adverse balance of payments.
2. Maintenance of stable rates of foreign exchange.
3. Protection of home industries against foreign competition.
4. To ensure that the foreign exchange earned by the exports of a country is spent in the purchase of essential goods, *e.g.*, capital goods necessary for economic development.
5. To provide better markets for its products by negotiations and treaties.
6. To promote the political interests of the country. A country desires more trade with friendly countries and less trade with unfriendly ones.

DEVICES FOR CONTROLLING INTERNATIONAL TRADE

The foreign trade of a country may be controlled by the following methods.

I. Commercial Policy.

1. *Tariffs, i.e.*, duties on exports and imports.
2. *Quotas and quantitative limitations on imports* through licencing and other methods.
3. *Encouragement of exports* through bounties and other methods.
4. *Bilateral trade agreements.*
5. *International Cartels*, with or without government assistance.
6. *State trading.*
7. *Regional free trade e.g. Common Market. GATT.*

II. Monetary Policy.

1. *Under or over-valuation of exchange rates* : Undervaluation is a temporary expedient. Prices and eventually wages rise under the influence of the increased cost of imports and eliminate the bonus to exports. Overvaluation can secure better terms of trade but the export industries are affected.

2. *Multiple exchange rates, i.e.,* different exchange rates for the home currency for different purposes. This was the favourite expedient of pre-war Germany but is now contrary to the rules of the International Monetary Fund. Nevertheless France adopted this system in a limited way in 1949.

3. *Exchange control.*

FREE TRADE v. PROTECTION

Tariff Policy. Tariff Policy means the policy followed by the government of a country regarding the imposition of duties and restrictions upon commodities imported from foreign countries. There are two possible tariff policies : Free Trade and Protection. Free Trade means a policy of allowing imports to come without any duty or restriction, except such small duties as may be imposed for revenue purposes. According to strict free trade principles, if there are any revenue duties on imports they must be neutralised by the imposition of equivalent excise duties on the home produced article so that there is no discrimination between the home producer and the foreign producer.

A policy of protection means the imposition of restrictions on imports with a view to giving an advantage to the manufacturers of the domestic product. Such restrictions may be enforced by many methods. The most usual and general method is the imposition of customs duties on imports.

Different countries have followed different policies as regards tariffs at different times. The United States of America has followed a protectionist policy since the beginning of the 19th century. Great Britain was a free trade country from 1860 to 1913. From 1931-32 it became a fully protectionist country. The policy of the national government of India is highly protectionist. At the present time in almost every country the general preference is for protection.

There is dispute between the supporters of free trade and supporters of protection. Economists, politicians, and industrialists are divided on this question. Many arguments can be used in favour of and against each of the policies. The principal arguments are discussed below. It is to be noted that arguments in favour of free trade can be used as arguments against protection and *vice versa*.

THE CASE FOR FREE TRADE

The Classical economists were in favour of free trade. The principal arguments used by them and by others who followed their views on tariff policy can be summarised as follows.

1. **Maximisation of output.** In the absence of duties and restrictions, international trade takes place according to the *principle of comparative advantage*. Each country devotes itself to the production of those commodities in which it has a comparative advantage or the greatest efficiency. If there is free international trade, every commodity would be produced by the country which is best fitted to produce it. Naturally, the total output would be larger than what it would be if every country produced everything for itself. Thus free trade leads to *maximisation of output*. Any restriction on international specialisation by protective duties or otherwise would reduce total output.

2. **Maximisation of real income.** If international specialisation is allowed to have full scope, the factors of production in every country would be engaged in producing what they can produce best, *i.e.*, they would be employed in their most productive uses. Since the earnings of the factors of production depend upon their productivity, employment in the most productive use would increase their earnings to the maximum possible extent. Therefore free trade will *maximise the real income of the factors of production*.

3. **Maximisation of consumer satisfaction.** Free trade will benefit the consumers greatly. Free exchange combined with free competition will enable the buyers to secure the maximum possible goods at the minimum possible price. Thus there will be *maximisation of consumer satisfaction*.

4. **Evil effects of protection.** The policy of free trade can also be justified on the ground that the alternative policy, *viz.*, *protection*, produces various evil effects. Imposition of tariffs forces a country to take up industries for which it has less comparative advantage. It therefore causes an "inefficient allocation of resources". The total output, income and satisfaction become less than what they might be. Tariffs induce producers of the protected commodities to form monopolies which squeeze the consumer. "Tariff is the mother of trusts". Monopolies, with their large resources, can corrupt legislators in order to maintain their privileged position. Tariffs may also lead to international disputes and war.

Free Trade was the accepted policy of the British Empire during the 2nd half of the 19th century. The policy greatly benefited English industrialists because no other country during that period could compete with the developed industries of Great Britain. Free trade was

suitable for British business. But for other countries, particularly industrially undeveloped countries like India, it prevented the growth of local industries, facilitated colonial exploitation, and impoverished the country. Economic theorists soon pointed out flaws in the classical doctrine of free trade and advocated restrictions on imports under certain circumstances.

As regards underdeveloped countries, it is generally agreed that protection is necessary for their development.

THE CASE FOR PROTECTION

Many arguments have been used in support of the policy of protection. Some of them are good arguments, some of them are bad. Since protection is a matter of party politics in most countries, the bad and illogical arguments for protection are as popular as the good arguments. The arguments are summarised below.

1. *Bad arguments for Protection :*

1. **Keeping Money at Home.** It is said that protection prevents the purchase of foreign goods and therefore keeps money at home. This argument is illogical because if foreign goods are not purchased, the foreigners will have no way of paying for goods purchased from the protectionist country. In the long run exports tend to equal imports both under gold standard and under paper standards. So, if imports are reduced, exports will fall. The money saved by not purchasing imports will be lost by the reduced sale of export goods. We must remember the fundamental principle, viz., that "a nation cannot sell if it will not buy". The policy of keeping money at home, if pushed to its logical conclusion, will lead to a complete stoppage of international trade and the disappearance of the benefits obtained from international specialisation.

2. **The Home Market Argument.** American protectionists under Henry Clay argued that by protection new industries can be built up and the workers engaged in the new industry would provide a new market for the sale of home produced articles, particularly agricultural products. All domestic industries and the farming population would gain. This argument is wrong because actually no new market is created. The reduction of imports caused by protective duties will reduce exports and some export industries will have to curtail production or close down. So the 'new' market only replaces an existing market. The 'new' industry substitutes an older and probably more efficient industry.

The home market argument has in recent times been put in a different form which makes it sound more reasonable. Modern large scale production requires the use of heavy capital equipment and the

overhead expenses are fairly high. A small reduction in sales may force a big industry into liquidation. Such industries should not be left exposed to foreign competition. At least the domestic market should be reserved for them so that they can be sure of a certain volume of sales. Protection in such cases provides for *stability of output*. The argument in this revised form is open to the criticism previously mentioned, *viz.*, that an industry maintained by protection is only at the cost of other and probably more efficient export industries.

3. The Balance of Trade Argument. A suitable tariff policy can create and maintain for some time at least, a surplus of exports over imports. According to widespread and popular belief such a surplus is 'favourable' for a country because it brings "money" into the country. During the 16th, 17th, and the 18th, century, the commercial policy of many European countries was deliberately designed so secure a favourable balance of trade so that a store of gold and silver bullion may be built up. The policy was popularised and encouraged by the school of economics known as Mercantilism. Adam Smith and the classical economists pointed out the flaws in the reasonings of the Mercantilists. Accumulation of bullion is not necessarily favourable for a country. In any case, a surplus of exports over imports cannot continue indefinitely. It is soon neutralised by rise of prices in the country having the favourable balance and fall of prices in the country having unfavourable balance. In the long run exports must equal imports.

In recent times the balance of trade argument has been revived by Keynes and his followers is a new form. According to them, *an export surplus is equivalent to an increase of income* because the earnings of the export industries are increased by the amount of the surplus. An expansion of the export industries or of those local industries which compete with imported goods, causes a primary increase of employment. The expenditure of the additional incomes so created increases the demand and the production of all goods and causes a secondary increase of employment and incomes. Thus a favourable balance of trade is beneficial because it increases employment and income. There is also another effect. Increase of income increases the supply of loanable funds. The rate of interest falls and thereby tends to increase domestic investment.

A policy of trying deliberately to secure a favourable balance of trade for the purpose of increasing domestic income and employment is called the policy of "Beggars-my-neighbour" because the favourable effects are always at the cost of some other country. Just as the export surplus increases employment in one country, the import surplus of the other country would reduce employment and incomes in the other country. The total employment of the world as a whole will be unaffected. The following arguments can be advanced against the policy of deliberately trying to secure a favourable balance of trade :

(a) A country can increase its balance of trade by exchange depreciation, reduction of wages, subsidies to export, or restriction of imports. All these expedients are limited in their scope. The first two cannot be continued indefinitely.

(b) As soon as one country succeeds in increasing its balance of trade by one or more of these methods, the others retaliate and the favourable balance disappears.

(c) The total volume of international trade falls continuously. The efficiency of world production suffers because international specialisation is affected.

(d) The rate of interest in countries having unfavourable balance of trade tends to rise. The higher rate induces a flow of funds to them from the creditor countries, *i.e.*, countries having favourable balances. To stop the flow the monetary authorities of the creditor countries have to increase rates of interest in their countries. So there is a general rise in the rates of interest.

Regarding the policy of increasing balance of trade, the conclusion of Joan Robinson¹ is as follows : "From an un-national point of view all (the expedients for increasing balance of trade) are equally objectionable, since each is designed to benefit one nation at the expense of the rest."

4. The Wages Argument. Protection is sometimes demanded against imports from low-wage countries on the ground that such imports will reduce wages in the home country. The policy cannot be supported because refusal to trade with a low-wage country will reduce the demand for the products of such a country and reduce its wage-level still further. This may not be the concern of the home country and may not be considered a good argument from the nationalistic standpoint. But there is another valid reason for rejecting this policy. Refusal to buy from a low-wage country means abandonment of gainful trade. One might as well refuse to buy goods or borrow from low-interest countries on the ground that the local capitalists will suffer.

It is sometimes claimed that protection keeps wages high at home. It can do so only if protection brings into existence a new industry and thereby increases the demand for labour. Such a thing can possibly be done in undeveloped countries by protecting infant industries. But in developed countries new industries can only be created by tariffs at the cost of existing export industries. Since exports must equal imports in the long run, tariff cannot increase the total volume of industry or the demand for labour. High wages ultimately depend upon high productivity and not upon high tariffs. Taussig says, "No

¹ Joan Robinson, *Essays on the Theory of Employment*, Part III, Ch. 2.

economist of standing would maintain that a protective tariff is the one decisive factor in making a country's rate of wages high."

5. **The Employment Argument.** It is sometimes argued that protection can increase the volume of employment in a country. The classical writers rejected this notion on the ground that if imports are restricted, exports will fall to the same extent; the new jobs created in the protected industry will be at the cost of some old jobs in the export industries.

According to Keynes, however, an export surplus is equivalent to new domestic investment. Protection can, by increasing the balance of trade, increase employment and income provided that its effects are not neutralised by retaliatory steps taken by other countries. (See above under the balance of trade argument).

There is one situation where diminution of imports will not be followed by a diminution of exports. *If the tariff imposing country uses the proceeds of the export surplus in foreign loans and investments or in making gifts to the foreigners, there will be no diminution in the foreign demand for its goods and there will be no fall in the production of the export industries.* Domestic incomes will increase because of the multiplier effect of the initial investment. Protection, under these circumstances, can bring into existence new industries and maintain a high volume of employment. The huge amounts spent by U.S.A. for foreign assistance during and after the war operated in this way. The dollar problem was solved by gifts of dollar. Coulbourn describes the European Recovery Programme as "strategic philanthropy." This is probably a too cynical view of American policy. But the policy of maintaining high employment at home by capital exports, cannot be continued indefinitely. The employment argument is therefore not a valid reason for adopting a policy of protection.

II. *Good Arguments for Protection :*

1. **The Infant Industry Argument.** The superior technical efficiency of certain countries in the production of certain goods (e.g., Great Britain in textiles in the 19th century) is not due to natural advantages but to greater experience and longer practice. Other countries can be brought up to the same level of efficiency if their industries are protected and nursed during the formative period. This argument was developed by the German economist Friedrich List. According to List, a country in the agricultural stage of development will have considerable difficulty in starting new industries unless protection is given against the already established industries of advanced countries during the period of transition to industrialisation. Protection, according to this argument, is a temporary expedient to tide over the initial difficulties of industrialisation. The principle is, "Nurse the baby, protect the child and free the adult."

It is generally admitted that there is considerable force in the infant industry argument. The only difficulty lies in the *application* of the policy. The argument justifies the grant of protection to industries which will eventually have comparative advantage and will be able to compete with foreign producers without assistance. It is not always easy to determine beforehand what industries come within this category. Again this argument justifies protection for a temporary period only. But once protective duties are imposed it is difficult to secure their removal. Vested interests develop. Political pressure and unsound arguments are used to justify continued protection. Protected industries become slack and do not take adequate measures for the increase of efficiency and productivity. Thus the protected 'infant' tends always to remain an 'infant'.

2. The Defence Industries Argument. Considerations of security justify the policy of protection under certain circumstances. Defence industries like manufacture of rifles or ammunition cannot be allowed to die as a result of foreign competition. As Adam Smith put it, opulence is less important than defence.

3. The Diversification of Industries Argument. Development of national character requires the existence of at least some industries, for it is generally agreed that industrial pursuits develop the intellect and lead to a more progressive outlook. This argument must not be pushed too far, for the greater the diversity of occupation, the less is the benefit from international specialisation.

4. The National Self-sufficiency Argument. Considerations of National Self-sufficiency also justify protection in some cases. There are certain essential articles (*e.g.*, food) for which no country should be dependent on others, because international trade is not yet free from disturbances like war.

5. The Anti-Dumping Argument. Protection is justified as a retaliatory measure against dumping, exchange depreciation or any other measure adopted by a foreign country to improve its own position at the cost of others.

6. The Terms of Trade Argument. According to the classical view tariffs affects the terms of trade or international values. When this happens one country gains at the expense of another. But the gain of one country is not necessarily equal to the loss suffered by the other. Samuelson and Scitovsky showed possible cases where the gain of the tariff imposing country (in the absence of retaliation) will be more than the loss to the others. It is possible for a country to advance her own economic welfare by a suitable tariff policy. "Free trade can be shown to be beneficial to the world as a whole but has never been proved to be best policy also for a single country".²

² Scitovsky, *Review of Economic Studies*, Vol. IX.

THE FORMS OF PROTECTION

There are various ways of protecting an industry. The following is a list of the principal methods used.

I. Import Duties. The import of particular types of goods may be restricted or prevented by the imposition of duties. Such duties may be either Specific (calculated on weight, volume or other physical characteristics) or Ad-Valorem (calculated on market value or stamped value). For protective purposes ad-valorem duties are better because they counteract the effect of sudden price changes.

II. Export Duties on raw materials of an industry. Protection may be given to an industry by imposing an *export* duty on a raw material used by it. For example, the cotton textiles industry can be given a benefit by putting an export duty on raw cotton. Such a duty will reduce export of raw cotton, increase its domestic supply and lower its local price. The cost of production of the textiles industry is thereupon reduced and its competitive capacity increased. In India the method was used when a duty was imposed on the export of raw hides and skins in order to give an advantage to the tanning industry. The method of export duty operates very harshly. In effect it amounts to a transfer of money from the producers of raw materials to the producers of finished goods. The method is not generally used.

III. Quantitative Restrictions. Under this method the government lays down in advance the maximum quantity of imports of a commodity to be permitted during a period of time. This method prevents unforeseen changes in prices and costs from reducing the effectiveness of tariffs. The following arguments can be used against quantitative restrictions :

(i) There is a danger of a monopoly developing and exploiting the consumer, if the quantity permitted to be imported is too small.

(ii) Quantitative restrictions sever the connection between internal prices and world prices. Tariffs maintain the link.

(iii) The rise of prices following the reduction of import caused by quantitative restrictions, benefits only the local producers. Under tariffs, part of the gain comes to the Government in the form of customs revenue.

(iv) The method requires fixation of quotas for exporting countries and importing firms. Opportunity arises, for discrimination between different countries and there may be retaliation by other countries. The distribution of permits among importers may give rise to nepotism and corruption.

(v) Government interference in foreign trade increases.

Quantitative restrictions may form part of a general licensing system under trade control but should be used sparingly in view of its disadvantages.

IV. Bounties and Subsidies. These are grants of money to a particular industry in order to reduce its costs and increase its competitive capacity. The payments are usually proportional to the quantity produced but may also be made by lump sum grants. The advantages of Bounties and Subsidies are as follows : (i) prices are not raised ; (ii) payments are required only on goods produced locally ; (iii) it is easy to discriminate between grades of goods ; and (iv) the cost is definitely known and felt. The disadvantages of Bounties and Subsidies are as follows : (i) they require careful control over the volume and quality of production ; (ii) for adequate protection too large payments may be necessary ; and (iii) there is a burden on the taxpayer.

It is generally agreed that this method of granting protection should be used only in the following cases : (i) when the domestic production meets only a small part of the domestic demand but it is considered essential to maintain local production. To put a duty on all imports in such cases would increase prices unduly. (ii) When the commodity concerned is an essential raw material or tool. To put a duty on all imports in such cases would increase the costs of industries which use the commodity. (iii) When the manufacture of certain grades of a commodity requires protection but they are difficult to distinguish from others for import duty purposes.

There are methods of combining subsidies with protective duties. They may be used together, *e.g.*, a low rate of duty plus a subsidy. The proceeds of an import duty may be given away as subsidy or may be used to create a development fund for the industry concerned. The Charter of the International Trade Organisation discourages import duties but does not forbid subsidies.

V. Pooling and Mixing Arrangements. The Government may arrange to have the imports pooled with the domestic output and the aggregate quantity sold at a uniform price. This method is applicable only for standardised products but it ensures the sale of a certain quantity of the local product. (*Examples*—in pre-war Germany imported wheat could not be milled unless it was mixed with a certain quantity of local wheat ; in U.K. cinemas are bound to exhibit a certain percentage of English films with American ones).

VI. Tariff Quotas. Under this method, imports up to a certain volume are admitted free—the excess over it bears a duty. This ensures sufficient supply to the consumer if internal production is small. It also puts a premium on efficiency and rapid progress and guards against the formation of local monopolies.

VII. Administrative Protection. Certain administrative regulations have a protective effect, *e.g.*, (i) Customs regulations and formalities. Under the Sea Customs Act there are restrictions on the import of certain goods for reasons of public security, public health,

etc. Under other acts there are restrictions for the protection of plant, animal life etc. Such regulations are justified but must not be used for protection only because they conceal the cost of protection ; (ii) Railway and Shipping rate policy and Shipping regulations ; (iii) Stores purchase policy.

The manner in which protection is to be given should be decided after examination of the facts of the particular case.

BILATERALISM OR BILATERAL TRADE AGREEMENTS

Bilateralism means trade agreements between two countries. Usually it involves an effort to secure a predetermined quantitative ratio between the exports to each other from each other. In many arrangements the ratio has been 1 : 1 but if interest payments or loans are contemplated a higher ratio may be fixed. Compensation or clearing agreements are usually added.

Bilateralism causes a reduction in the volume and profitability of foreign trade. This follows from the fact that exporters are no longer free to sell in the best market. On the import side it is no longer the cheapest country but the country for which a clearing balance is available that now secures the trade.

The main motive of bilateralism, according to Ellis, is desire for monopoly power. "Since bilateralism consists in the breaking up of a country's external market into a series of isolated segments, we shall not go far astray if we discover its long term purpose in this very isolation ; and isolation among groups of buyers or sellers gives to the other party to the market the power of monopoly." Bilateralism can be used to reduce the trading partner to a state of bondage (e.g., Germany and her satellites during 1933-39).

In spite of the aforesaid criticisms it must be noted that bilateral trade agreements are sometimes the only method of inducing trade under certain circumstances, e.g., India and Pakistan in 1948. Such agreements also give access to essential goods not otherwise obtainable. The decay of free trade in post-war years has rendered recourse to this method of trading almost indispensable.

STATE-TRADING

The term State-Trading is generally used to describe the policy of active participation by the State in foreign trade. Before World War II, Nazi Germany and Soviet Russia were the only two countries which practised state trading on an extensive scale. But during and after the war the tendency spread to other countries also. Nowadays the most comprehensive form of state trading is found in Soviet Russia, her allies and Communist China. In these countries state trading is a

part of the economy and is used both for the purpose of co-ordinating trade with national planning and of striking the best possible bargain with foreign countries.

But many other countries, avowedly based on private enterprise, also practise state trading with a variety of motives. For example, in some South American countries like Argentina most of the foreign trade is conducted through state owned and state controlled organisations. Wheat Boards in Australia and Canada control the entire exports of the commodity in those countries. In U.K. during World War II, raw cotton, tea, non-ferrous metals and foodgrains were imported through state agencies under bulk-purchase agreements. U.S.A. does extensive trading operations through its gigantic statutory corporations like the Commodity Credit Corporation and the Reconstruction Finance Corporation. The operations are undertaken for a variety of purposes like stabilization of agricultural prices, procurement of supplies for foreign governments and formation of stock-piles. In Canada, the Canadian Commercial Corporation procures all supplies required by the Ministry of Defence and carries on negotiations with foreign governments on behalf of Canadian traders. In India, a State Trading Corporation has been established.

Advantages. The causes which have led to the growth of state-trading in recent times and the advantages claimed for the policy can be summarised as follows :

1. There is a growing trend towards monopolistic buying and selling in international trade in modern times. A state-monopoly is preferable to private monopoly.
2. State trading is a means of intercepting excessive profits made by exporters of certain commodities.
3. State trading is an additional weapon in the armoury of the state to give effect to its economic policies.
4. State trading facilitates the implementation of bilateral trade agreements.

Objections. The principal objections to the policy of state trading can be summarised as follows :

1. Government officials lack knowledge and experience of trading matters. If they fail to make reasonable forecasts of demand and supply there may be heavy loss. Accurate forecast is essential not only about quantity but also about quality and variety.
2. Government agencies lack initiative and enterprise.
3. Foreign trade under private enterprise is substantially competitive. State trading will automatically become monopolistic and consumers may not enjoy freedom of choice.

4. The substitution of State Trading for private business would lead to the transformation of private quarrels into inter-governmental quarrels, which will be dangerous for peace.³

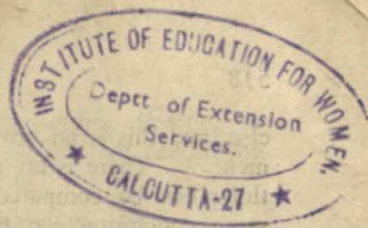
RECOMMENDED READINGS

1. American Economic Association, *Readings in the Theory of International Trade*.
2. Ellsworth, *The International Economy*.
3. Samuelson, *Economics*, (9th edition), Ch. 35.
4. Benham, *Economics*.

EXERCISES

1. What is meant by free trade? Is it always advantageous? (C.U. B.A. '66).
2. Examine carefully the arguments in favour of free trade. Can backward countries follow a free trade policy for their economic development? (C.U. B.A. '65).
3. Do you advocate protection? How can protection facilitate economic development of underdeveloped economies? (C.U. B.A. '65, '67, '69, '73; See C.A. Nov. '71).
4. Would you advocate the adoption of a policy of protection (a) to protect infant industries and (b) to cure unemployment in the country? (C.U. B.Com. '65).
5. Discuss the grounds on which a country may be justified in placing restrictions on the freedom of International Trade. (C.U. B.A. '62).

³ Jacob Viner in *Readings in the Theory of International Trade*.



CHAPTER 33

THEORY OF EMPLOYMENT

Definition. The Theory of Employment analyses the factors which determine the volume of employment in a country.

Economists of the 19th Century were not much concerned with any theory of employment. They believed in a proposition known as Say's Law of Markets and *assumed the existence of full employment*. (Say's Law is explained below).

The depression of 1929-33 showed that a country may suffer from unemployment even though it has unused resources which can be used to provide employment.

In his famous book, *The General Theory of Employment, Interest and Money*, Keynes showed that full employment is not automatically brought about by the free play of economic forces. There may be *stable equilibrium*, in the employment market, co-existing with a large volume of unemployed resources (including unemployed labour). Such a situation may be described as a state of underemployment equilibrium. An underemployed economy may be moved towards full employment by an appropriate fiscal policy.

SAY'S LAW

J. B. Say, an early 19th century French economist, enunciated the proposition that, "supply creates its own demand". This is known as Say's Law. The arguments advanced by Say were as follows.

Explanation. In an exchange economy goods are ultimately sold for goods. Every article brought to the market is a demand for some other article. The total stock of marketable goods is the demand for itself. Therefore, there cannot be a *general overproduction* in the sense of output as a whole exceeding demand as a whole. But a particular goods may be overproduced in the sense that its supply is large in comparison to other goods. Excess supply of a particular goods can be corrected by reducing production. But goods, as a whole, cannot be overproduced. It is also impossible for society to gain by restricting output in general.

Say's Law, phrased in terms of real goods cannot be questioned. As Lerner¹ says, "a general oversupply of everything would mean that too much of everything was being produced relatively to everything

¹ Lerner, *Economics of Employment*, p. 155.

else, and this is an obviously impossible and indeed nonsensical statement.... There is no 'everything else' with which the excess of everything can be compared. A general oversupply is impossible." The same conclusion can be drawn from another line of argument. So long as wants of men are unsatisfied—and they are so in every society—too much supply of all goods is absurd to contemplate.

Criticisms. Classical economists however applied Say's Law to a *money economy* and drew conclusions which were unwarranted. They thought that since over-production is impossible, all goods will find a market. In other words (i) there cannot be unemployed resources and (ii) the money-demand for all goods taken together must always be enough to sell them. *On the basis of this logic they assumed the existence of full employment and argued that factors of production remain unemployed only when they refuse to accept the market price for their services.*

Keynes showed that these conclusions were false. While general over-supply is impossible, general insufficiency of *money demand* is possible because of lack of money to purchase the goods. This occurs when total expenditure in the community (public *plus* private) falls short of what is required to purchase the total output. In times of depression we find plenty of unsold goods existing simultaneously with plenty of unsatisfied wants. The goods are not purchased because the money incomes are low. This is a situation which can aptly be described as general over-production.

Pigou Effect. The real value of cash balances increases when real wages fall. When the real value of cash balances increases, the propensity to save decreases and aggregate consumption increases. Increased consumption leads to full employment. Pigou maintained that if price and wages are completely flexible, an economy will (through increased consumption) automatically grows to the level of full employment. This is known as the Pigou Effect.

THE CIRCULAR FLOW IN ECONOMIC ACTIVITY

Economic activity results in the production of various commodities and services. Production and consumption are inter-related. A community can, as a rule, consume only what it produces *plus* what it can get through international trade in exchange of its exports.

From the economic standpoint every citizen stands in a two-fold relationship which the community in which he lives. He is a producer of goods and also a consumer. Individual citizens work in various productive enterprises and produce commodities and services. The commodities and services are purchased by the consumers. But the money required for such purchases can come only from the income

earned by them by participating in production—either directly, by working, or indirectly, by lending the use of factors of production under their ownership.

Ignoring certain complications, it can be said that,
Income of citizens

= money earned by producing output

= the sale proceeds of output.

The income of citizens is spent partly in the purchase of goods and services and partly in saving. Therefore,

Income = Consumption + Saving.

The savings are, in due course, invested in new capital assets. The new capital assets are used for further production, which again produces further income.

Economic activity in a country produces a circular flow of incomes, the nature of which can be shown in the form of a chart as in Fig. 72.

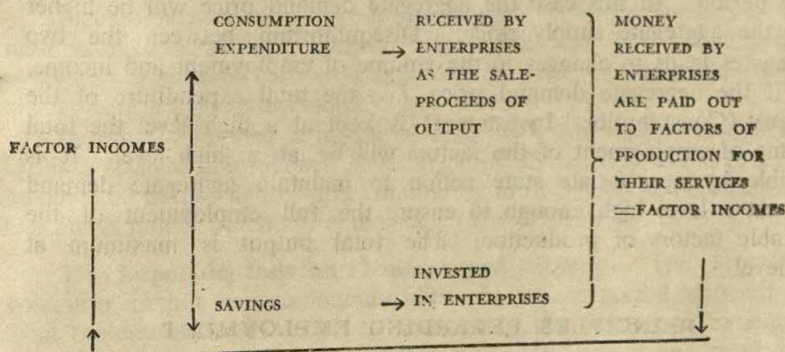


FIG. 72

Certain consequences follow from the circular interdependence of the economy. *The size of the flow of commodities and services from enterprises to consumers depends upon the flow of productive services from factors to enterprises.* If the productive resources are scanty or are underdeveloped, the total output must be small. This is true not only in a primitive economy where everyone produces for himself, but also in an advanced economy with a high degree of specialisation. There is, however, another consequence which is true only in a money economy: *the size of the flow of money sales receipts by enterprises depends directly on the flow of money payments made by enterprises to the factors of production.* More money paid out to factors means more income for the factors which means more purchase of commodities and services and higher sales receipts. The total money payments to the factors of production and the total money receipts

obtained by the sale of output are important economic quantities. According to Keynes these two quantities determine the volume of employment and the size of the national income.

The aggregate money payment to the factors is equivalent to the total cost of production. It can be called the *aggregate supply price of the national output*. The aggregate sales receipt is equivalent to the total payments made by the consumers and can be called the *aggregate demand price for the national output*.

The aggregate supply price and the aggregate demand price are interdependent because each is the primary source of the other. But the two aggregates are not necessarily equal. The income-receivers (owners of factors) may decide to spend less than the amount received and hoard cash or increase their liquid balances. In this case the aggregate demand price may become less than the aggregate supply price. Conversely, they may decide to dishoard previously accumulated cash balances and spend more than they have earned in a particular period. In this case the aggregate demand price will be higher than the aggregate supply price. Disequilibrium between the two aggregates leads to changes in the volume of employment and income.

If the aggregate demand price, *i.e.*, the total expenditure of the citizens (Consumption+Investment) is kept at a high level the total volume of employment of the factors will be at a high level. It is possible by appropriate state action to maintain aggregate demand price at a level high enough to ensure the full employment of the available factors of production. The total output is maximum at this level.

PRINCIPLES REGARDING EMPLOYMENT

Before discussing the Keynesian Theory of Employment it will be useful to explain certain general principles, relating to employment theory. They are as follows.

1. **Output varies with employment.** The aggregate output (of goods and services) in a community depends on the number of workers employed *i.e.*, *output is a function of employment*. This proposition is true if certain assumptions are made. Goods are produced with labour, together with several other factors of production. Therefore, output can be increased by increasing the use of capital and other resources without increasing the amount of labour. Output can also be increased (with a constant labour force) by increasing the efficiency of labour or by making labourers work longer hours. In most employment theories (including the Keynesian Theory) the aforesaid considerations are ignored on the ground that they are not of much importance, at least in the short run. The aggregate stock of capital and other material resources in a country cannot be quickly changed and in times

of unemployment it is easier to change the number of labourers employed than change their efficiency level or their working hours. It is therefore safe to assume that output can ordinarily be increased or decreased only by increasing or decreasing the number of workers employed. In other words we can assume that *the volume of output varies with the volume of employment*.

2. **Output=Income.** The aggregate value of output is equal to the aggregate income of the community. This proposition is easy to prove.

The market value of a particular output
 =total rent+total wages+total interest+ total profit
 =total payment to the factors of production.
 $\therefore$ aggregate value of output
 =aggregate payment to all factors of production
 =aggregate income of the factors of production.

Income is earned by producing output. (While measuring the national income, transfer incomes like gifts are not counted. See p. 249.) Subject to certain safeguards, the value of aggregate output always equals aggregate income.

In Fig. 74 income is measured along OX and output along OY. OZ is a straight line inclined at an angle of 45° to OX and OY. The income and output figures of a community must lie on OZ because only OZ shows points which are equidistant from OX and OY.

3. **Output depends on Demand and Supply.** The aggregate volume of output in a community, during a certain period, depends on what the entrepreneurs decide to produce. (The term entrepreneur is used in a wide sense to include all producers of goods and services). The output of an individual entrepreneur is based on a calculation of what he expects to get for it and what costs he will have to incur for producing it. Taking the community as a whole we can say that size of aggregate output depends on the aggregate revenue that is expected and the aggregate costs that have to be incurred. Let us suppose that aggregate output is shown along the horizontal axis OX in Fig. 73. The aggregate revenue for each level of output can be shown by an upward moving line like DD. The line moves upwards because the larger the output the larger must be the sale proceeds.

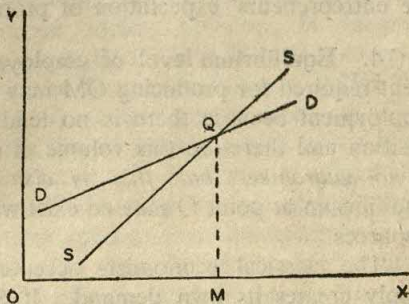


FIG. 73

The aggregate costs at each level of output is shown by SS. This line also must move upwards because the larger the output, the larger must be the aggregate costs. DD and SS intersect at Q. At this point the level of output is OM. It will be seen that at all output levels less than OM, the aggregate revenue is larger than aggregate costs. The actual output will not remain at such a level because entrepreneurs will expand production with a view to earning more profit. At all output levels larger than OM, the aggregate costs are higher than aggregate revenue. Entrepreneurs will not stay at such levels because they will incur loss if they do so. At output level OM there is neither loss nor possibility of increased profit by expansion of production. Hence OM is the equilibrium output. The equilibrium level of employment is that which is required for producing OM.

The line DD is called the *Aggregate Demand Curve* for the national output and SS is called the *Aggregate Supply Curve* of the national output. Both the curves are normally upward sloping. The exact shape of DD depends on the volume of spending in the community, i.e., how much the people are prepared to pay for different quantities of output. The shape of SS depends on technical considerations, i.e., how much money is required for producing different quantities of output. The level of output (and the level of employment) is shown by the point of intersection of the two curves.

If Z be the aggregate supply price of output from employment of N men, then Z and N are functionally related. Let $Z = \phi(N)$. This is the Aggregate Supply Function.

If D is the proceed which entrepreneurs expect to receive from employing N men, then D and N are also functionally related. Let $D = F(N)$. This is the Aggregate Demand Function.

When D is greater than Z, N will tend to increase, i.e., entrepreneurs will tend to increase employment. The process will go on until the value of N becomes such that $Z = D$. The volume of employment is given by the point of intersection between the Aggregate Demand Function and Aggregate Supply Function. At this point that the entrepreneurs' expectation of profits will be maximised.

4. *Equilibrium level of employment.* The volume of employment required for producing OM may be called the equilibrium level of employment because there is no tendency to move away from this position and therefore this volume of employment is stable. But there is no guarantee that this is also the level of full employment. Equilibrium at point Q may co-exist with a large volume of unemployed resources.

The classical economists accepted Say's Law, which states that supply creates its own demand. If Say's Law is true, the aggregate demand for output is always equal to the aggregate supply of out-

put. So all resources are automatically brought into employment (except resources the owners of which refuse to let it be used). According to classical economists DD and SS coincide throughout their lengths because there is always full employment.

THE EMPLOYMENT THEORY OF KEYNES

Keynes analyses the determinants of employment in the following way.

Effective Demand. The size of the equilibrium output (OM in Fig. 73) depends on the *effective demand* of the people for goods and services, *i.e. what the people are prepared to pay for purchasing them*. The effective demand is equal to the *total expenditure* of the people. The aggregate value of goods and services sold during a period must be equal to the total expenditure of the people during that period.

The total expenditure can be divided into two parts, *consumption expenditure and investment expenditure*. The first part includes the expenditure of the people for purchasing goods and services needed for consumption. The second part includes expenditure incurred by entrepreneurs for constructing new capital assets like machinery and factory buildings which may be called investment goods. The total expenditure must be equal to the total income. If Y = total income, C = total consumption expenditure, and I = total investment expenditure, then $Y = C + I$. *This is the basic formula of the Keynesian system.*

Consumption expenditure and investment expenditure lead to the production of output and employment of workers. Thus it follows that *the determinants of employment are to be found in the factors that determine the volume of consumption expenditure and the volume of investment expenditure*. These two parts of aggregate expenditure can be further analysed as follows.

1. Consumption Expenditure. The volume of consumption expenditure depends on a variety of factors like habit, taste, future expectations etc. The most important factor, however, is income. Between income and consumption expenditure there is a definite relationship which can be expressed in the form of a function, called the Consumption Function. (See p. 526). When income increases, consumption also increases but generally by an amount which is less than the amount by which income has increased. If a man's income increases by Rs. 50, his expenditure will increase by an amount less than Rs. 50. This principle must be applicable to the community as a whole. Therefore, if we draw a line to show the relationship between aggregate income and aggregate consumption expenditure, the line will slope upwards at an angle of *less than 45°* to the income axis.

In Fig. 74, CC^1 is the community's Consumption Function. It shows that as income increases, consumption increases but not as fast as income. Therefore it is inclined to OX at an angle of less than 45° . If consumption was always equal to income, CC^1 would have coincided with OZ which is the 45° line. The gap between CC^1 and OZ grows wider as income increases. The gap represents savings.

2. Investment Expenditure. The term 'investment' means the construction of a new capital asset. Investment expenditure is incurred when entrepreneurs expect to make a profit by doing so. According to Keynes, the volume of investment is determined by two factors, *the marginal efficiency of capital* and *the rate of interest*. The marginal efficiency of capital means the expected rate of return from new capital assets. When profit expectations are high, entrepreneurs invest more. Profit expectations *do not* depend on the current level of income. Therefore, the volume of investment does not depend on income but on expected profits and the rate of interest. The rate of interest is a factor determining investment because (i) many investments have to be made partly at least with borrowed capital and (ii) interest is a part of cost of production which must be deducted from gross revenue in order to calculate profit. A low interest rate increases the possibility of profit and encourages investment. A high rate of interest checks investment.

Diagrammatic Representation. The results of the aforesaid analysis can be shown in the form of a diagram as follows :

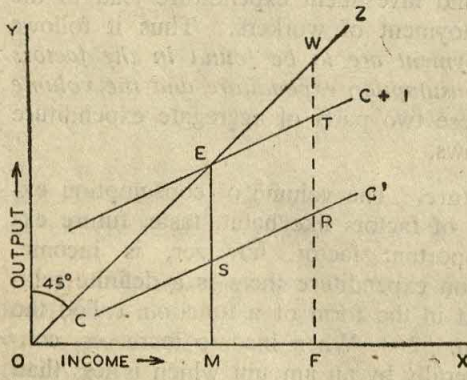


FIG. 74

In Fig. 74, OX represents income (and employment) ; OY represents output (consumption goods+investment goods). OZ is a straight line inclined to OX and OY at an angle of 45° . A point showing the actual output of the community and its actual income must lie on OZ because income must always be equal to output. [As OZ is inclined at 45° to OX and OY, all points on it are

equidistant from OX and OY. Therefore at all points on OZ, income=output. At all other points in the diagram income is not equal to output.]

CC^1 shows the consumption expenditure in the community at each level of income. To get the total expenditure at any level of

income we must add to the consumption expenditure at that level the investment expenditure which is incurred. Let us suppose that the line $C+I$ shows the sum of consumption expenditure and investment expenditure at each level of income. The gap between CC^1 and $C+I$ shows the investment expenditure.

From the diagram we find that $C+I$ intersects OZ at E . At this point consumption expenditure is MS and investment expenditure is SE . The total expenditure EM is equal to the total income OM . [$EM=OM$, because $\angle EOM$ and $\angle OEM$ are both equal to 45° .] Since E is on OZ , total income OM is also equal to the total output. With a given consumption function (CC^1) and a given level of investment, the total income and total output are shown by the point of intersection between the expenditure line ($C+I$) and the 45° line (OZ).

The income and output shown by E will not change unless there is a change in the shape of CC^1 and $C+I$. E is therefore a position of stable equilibrium. But the income OM , generated at E , is not necessarily the income which might be obtained at full employment *i.e.*, when all resources (including labour) are fully employed. Suppose that OF (in Fig. 74) is the full employment income. This income will be realised only if $C+I$ is made to move upwards and intersect OZ at W . This can be done *either by raising the consumption function or by increasing the volume of investment*. The gap in total expenditure which is required to be filled up is WT .

A Summary. The Keynesian Theory can be summarised as follows :

1. The Volume of Employment and the level of income depends on Effective Demand.
2. Effective Demand depends on total expenditure (consumption+investment).
3. Consumption Expenditure depends upon the Propensity to Consume.
4. Investment Expenditure depends upon the Marginal Efficiency of Capital and the Rate of Interest.

From the above relations it follows that the volume of employment and income depends on (i) the Propensity to Consume (ii) the Marginal Efficiency of Capital and (iii) the Rate of interest.

In the short run, the propensity to consume and liquidity preference (which is the main determinant of the rate of interest) are, more or less stable. Therefore, *the most important factor influencing employment and the level of income, is the marginal efficiency of capital.*

The Keynesian aggregates, defined above, can also be shown by the following chart.

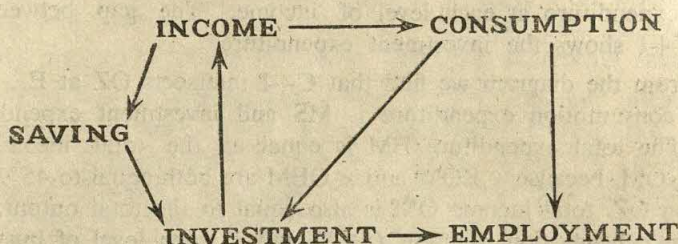


FIG. 75

THE CONSUMPTION FUNCTION

An individual spends a part of his income for the purchase of consumption goods and saves the rest. Keynes called the proportion (out of a given income) which is consumed, "the Propensity to Consume" and the proportion which is saved, "the Propensity to Save". The proportion between *total* income and the *total* consumption expenditure is called the Average Propensity to Consume. The proportion between an *increment* of income and the corresponding *increment* of consumption is called the Marginal Propensity to consume.

$$\text{Average Propensity to Consume} = \frac{\text{total consumption expenditure}}{\text{total income}}$$

$$\text{Marginal Propensity to Consume} = \frac{\text{increase in consumption expenditure}}{\text{increase in income}}$$

Factors. The Propensity to Consume (see p. 83 and p. 91) depends on a variety of factors. The important factors are listed below.

(i) *The Standard of Living.* Every individual is accustomed to the use of a certain quantity of necessities, comforts and luxuries. The amount of consumption goods, which is purchased, depends upon the standard of living of the individual.

(ii) *Imitation.* People try to imitate the consumption standards of people whom they consider superior. Sometimes expenditure is incurred merely for "keeping up" with the neighbours. ("Demonstration Effect"—p. 84).

(iii) *Future expectations.* When it is expected that prices will rise, people buy more in the present in order to save money in the

future. When prices are expected to fall, purchases are postponed. Similarly, when a man expects that his income will increase in the near future, he raises his consumption standard. In the converse case he tries to reduce his purchases.

(iv) *Distribution of income in the community.* Generally speaking poor people have to spend the greater part of their incomes on consumption. Rich people usually do not find it necessary to spend a large part of their incomes and they can save. From this it follows that poor people have a high propensity to consume and rich people have a low propensity to consume. If distribution becomes better more money will come to the hands of the poor and the total expenditure on consumption will increase.

(v) *The level of taxation.* A high level of taxation reduces the disposable income in the hands of the people and reduces aggregate consumption. A low level of taxation usually has a beneficial effect on consumption.

(vi) *The Propensity to Save.* People save from a variety of motives like family affection, desire for security etc. If the desire to save is very strong, consumption is checked. Thus propensity to consume is influenced by the peoples' habits regarding saving.

(vii) *The amount of income.* The most important factor determining consumption is the amount of income which is earned. Whatever be the standard of living of an individual and whatever be his taste and inclination, he cannot spend more than what he earns. As a general rule the higher the income the higher is the consumption expenditure.

Conclusion. The list given above includes only the important factors affecting consumption. It is almost impossible to make an exhaustive list of such factors because consumption is fundamentally based on complex psychological motives which defy enumeration. Keynes² observes that, "the strength of all these motives will vary enormously according to the institutions and organisation of the economic society which we presume, according to habits formed by education, race, conventions, religion and current morals, according to present hopes and past experience, according to the scale and technique of capital equipment and according to the prevailing distribution of wealth and the established standards of life."

The consumption habits of the people are so deep-rooted in their customary practices and national history that they do not change quickly. For this reason Keynes assumed that the *propensity to consume is stable in the short run.*

² Keynes, *General Theory of Employment, Interest and Money*, p. 109.

Consumption function. If propensity to consume is stable it follows that in the short run the aggregate consumption expenditure increases and decreases according as aggregate income increases or decreases. Therefore a *functional relationship can be established between Income and Consumption*. Such a function is called the Consumption Function.

The Consumption Function can be expressed algebraically in terms of income or it may be shown as a line in an income-output plane (see Fig. 74). The exact form or shape of the consumption function of a particular community cannot be determined with certainty. It can, however, be presumed that the consumption function is inclined to the income axis at an angle of less than 45° . This rule follows from the principle that the marginal propensity to consume is less than unity. When a man's income increases he generally does not spend the whole of the increase. Keynes assumed that this principle applies not only to individual expenditure but also to aggregate expenditure. When aggregate income increases aggregate saving becomes larger because in a capitalist economy people have an inherent urge to save. Therefore as income increases the proportion between consumption and income becomes less and the gap between income and consumption becomes wider. In a primitive economy, where there is no saving, $Y=C$ and the consumption function coincides with the 45° line. But this is not the case in an advanced capitalist economy.

THE INDUCEMENT TO INVEST

Definition of Investment. Keynes used the term Investment to mean *the construction of a new capital asset like machinery or factory buildings*.

Factors determining investment. Investment is made for the purpose of earning profit. Keynes believed that investment does not depend on the current level of income. It is not a function of income. According to Keynes, the volume of investment in a community depends mainly on two factors, the Marginal Efficiency of Capital and the Rate of Interest on long term loans. Both the factors are highly unstable, the former being more unstable than the latter. The factors determining investment are stated below.

1. **Rate of Interest.** The rate of interest influences investments because it represents the cost of borrowing. The profit from an investment is equal to the total revenue obtained from it *minus* the expenses, of which interest is a part. The entrepreneur expects a certain net yield from an investment and if the rate of interest is high the net yield is reduced. Hence a high rate of interest will cut out a number of investments and the total volume of investments will be less.

Conversely a low rate of interest will make some investments more attractive and the volume of investments will increase. Increase of investment is desirable because it increases income and employment. Keynes therefore recommended that Central Banks should follow the cheap money policy.

2. **Marginal Efficiency of Capital.** The marginal efficiency of capital is the highest rate of return over cost *expected* from producing one more unit of a particular type of capital asset. Suppose that a godown built at a cost of Rs. 20,000/- is expected to fetch a rental of Rs. 1,200/- per year. Suppose that depreciation and maintenance amount to Rs. 200/- per year. Then the net income which will probably be obtained by the owner is Rs. 1,000/- *i.e.*, a return of 5%. If the rate of interest is 4% there will be an inducement to construct such godowns. The marginal efficiency of this type of capital is 5%. If 5% is the highest rate of return which is expected to be secured from any type of investment, the marginal efficiency of capital in general in that community at that time is 5%. *Investment continues so long as the marginal efficiency of capital is greater than the rate of interest.*

The marginal efficiency of capital is equivalent to the demand for capital. The marginal efficiency of capital depends on business confidence. Hope of profit leads to demand for capital and more investment. Fear of loss deters deflation and unemployment. It decreases investment.

3. **Capital accumulation.** Growth of capital reduces the rate of interest and it creates the tendency to invest. Capital is essential for investment.

4. **Technological improvement.** Advance of technology increases output and profit opportunities. This factor is specially important for the deepening of capital. (See p. 40).

5. **Flexible wage rates.** Lower wages provide profit opportunities. Therefore it leads to more investment.

6. **Changes in the tax structure.** The inducement to invest may be increased by lowering taxes. In many countries rebates are given for new capital investment, *e.g.*: advantages as regards rates of depreciation.

7. **Population growth.** Growth of population leads to higher demand for the widening of capital. (See p. 40) Entrepreneurs get more profit and therefore there occurs more investment.

Conclusion. The marginal efficiency of capital is unstable in the short-run. It may vary indefinitely. Fluctuations in the marginal efficiency of capital are, according to Keynes, the fundamental cause of business cycles.

The marginal efficiency of capital declines in the long run. According to Keynes this is due to the fact that *the prospective yield from capital gradually diminishes* owing to the growing stock of capital asset. The supply price of capital (*i.e.*, its cost) may also rise but this is a short run factor. The declining tendency may be held in check by dynamic factors like increase of population, territorial expansion and certain type of technological changes. But in the long run the tendency to decline inevitably appears.

Secular Stagnation. The concept of "Secular Stagnation" as developed by Keynes and Hansen is similar to the concept of "declining profits" discussed by earlier writers. Adam Smith attributed falling profits to the fact that capital becomes more abundant in a progressive society. Ricardo and Mill ascribed falling profits to the niggardliness of nature (which leads to the Law of Diminishing Returns).

SAVINGS AND INVESTMENT

S=I. In his "*General Theory*", Keynes maintains that saving must necessarily be equal to investment. This applies to the community as a whole. When some people save more, they spend less on consumption goods thereby reducing the saving capacity of other people. In the end aggregate savings and aggregate investment become equal.

Saving=Income—Consumption

Consumption+Investment=Total Expenditure=Total Income

∴ Investment=Income—Consumption=Saving.

The equality between savings and investments follows from the definitions of the terms as given by Keynes. Saving is defined as income which is not spent; investment is defined as output which is not consumed. But income and output are equal, therefore savings equal investments.

It is to be noted that savings are equal to investment only at equilibrium. At point E in Fig. 74, total saving=income—consumption=EM—MS=ES=total investment. At all points other than E, saving is *not equal* to investment. From this it follows that savings are equal to investment over a *period* of time, not necessarily at every point of time. The equality is an *ex post* equality, not an *ex ante* one.

One apparent difficulty of understanding this concept of equality, between savings and investment, is that savers constitute one group in the community while investors constitute another group. How can the actions of two different groups of people produce identical results? The answer is as follows. Suppose that entrepreneurs have invested more than the community intends to save. The money spent by the entrepreneurs increases income and more is spent on consumption.

Such spending generates more income until the income is so large that the community can save as much as was invested. *The equality between savings and investment is brought about through changes of income.* The same argument will hold good if the community saves more than what the entrepreneurs invest. The result in this case will be equality of savings and investment at a lower level of income.

According to the traditional view income and savings determine investment. In Keynesian theory this is reversed. It is investment that determines income and the volume of savings.

THE MULTIPLIER

Relationship between Investment and Income. When investment increases by a certain amount, the aggregate income of the community increases by a multiple of that amount. This principle can be illustrated by the following example.

Suppose that investment increases by Rs. 1 crore. This means that Rs. 1 crore has been spent by entrepreneurs for the purchase of raw materials and the employment of labour. Naturally this results in an increase in the income of the suppliers of raw materials and of some workers. The aggregate income of the community increases by Rs. 1 crore. This is the *initial effect* of investing Rs. 1 crore. But *other effects follow*. The recipients of the aforesaid income of Rs. 1 crore will spend a part of it on consumption and save the rest. We can find out how much of the extra income will be consumed with the aid of the concept of marginal propensity to consume. Suppose that the marginal propensity to consume is $\frac{1}{4}$. (This means that people spend $\frac{1}{4}$ of any additional income they receive.) Out of the additional income of Rs. 1 crore people will spend Rs. 25 lakhs. ($\frac{1}{4}$ of Rs. 1 crore = Rs. 25 lakhs.) The additional expenditure of Rs. 25 lakhs will increase the incomes of certain people. Thus *at the second stage*, the aggregate income of the community increases by Rs. 1 crore + Rs. 25 lakhs. *In the third stage* $\frac{1}{4}$ of the additional income, Rs. 25 lakhs, will be spent on consumption. This will further increase the community's aggregate income by $\frac{1}{4}$ of Rs. 25 lakhs (= Rs. 6.25 lakhs). The total increase in the community's aggregate income is now Rs. 1 crore + Rs. 25 lakhs + Rs. 6.25 lakhs. The process will go on until the final addition to the income is too small to generate any further income. In the end we will find that the community's aggregate income has increased by the following amount.

$$\begin{aligned} & \text{Rs. 1 Cr.} + \frac{1}{4} \text{ of Rs. 1 Cr.} + \frac{1}{4} \text{ of } \frac{1}{4} \text{ of Rs. 1 Cr.} + \frac{1}{4} \text{ of } \frac{1}{4} \text{ of } \frac{1}{4} \text{ of Rs. 1 Cr.} + \dots \text{to } 0 \\ & = \text{Rs. 1 Cr.} \quad \left\{ 1 + \frac{1}{4} + \left(\frac{1}{4}\right)^2 + \left(\frac{1}{4}\right)^3 + \dots \text{to } 0 \right\} \end{aligned}$$

It can be shown that the sum of the above series is $\frac{4}{3} \times \text{Rs. 1 crore}$. Thus the total income, created by an investment of Rs. 1 crore,

is found by multiplying Rs. 1 crore by $4/3$. The figure $4/3$ is called the *Multiplier*. Its value can be calculated from the marginal propensity to consume.

The example given can be generalised with the aid of algebra as follows: Suppose that a is the marginal propensity to consume in a closed economy with constant prices and unchanged distribution of income. M units of money injected into such an economy will at the end of a certain period of time increase consumption expenditure (and therefore income) by Ma . The increased income Ma will produce, at the end of another period, increased consumption and income equal to $a \times Ma$ i.e., Ma^2 . Ma^2 will produce at the end of another period Ma^3 and so on. Therefore, in the end, the total increased income due to the initial expenditure of M will be equal to $M + Ma + Ma^2 + Ma^3 \dots$ (to infinity). Since a is less than one the sum of this infinite series

is $M \times \frac{1}{1-a}$. The constant $\frac{1}{1-a}$ is called the Multiplier because it tells us by how much the original increase of income M is to be multiplied to obtain the final result. "Income at any time is equal to current injection plus a fraction of the previous period's income, which was in turn the sum of the previous injection and income, and thus regressing backward in time, we may explain present income as the sum of all past injections each appropriately discounted". Haberler⁴ points out that the multiplier is only another name for or another mode of expressing the concept of marginal propensity to consume.

The formula for the Multiplier can also be obtained as follows. Let C denote consumption, I the investment, Y the income and a the propensity to consume. From the definitions of the terms it follows that,

$$C = aY \quad \dots \quad (i)$$

$$Y = I + C \quad \dots \quad (ii)$$

From these equations by eliminating C we get

$$Y = \frac{1}{1-a} \times I \quad \dots \quad (iii)$$

Thus the value of the Multiplier is $\frac{1}{1-a}$. The concept of the Multiplier was invented by R. F. Kahn and adopted by Keynes.

Apparently the above equations are true at all points of time. Actually there is a *time lag* between the receipt of income and its spending in equation (i) and between its spending and subsequent re-emergence as income in equation (ii). Therefore the solution (iii) only tells us the position which will be reached *after a lapse of time* if the rate of injection remains constant.

⁴ Readings in Business Cycle Theory, p. 193.

The multiplier concept brings out the fact that income is related to investment in a definite way. Statistical evidence collected in U.S.A. shows that the value of the multiplier in that country is about 3.5.

THE ACCELERATION PRINCIPLE

Investment is of two types, Induced Investment and Autonomous Investment. When investment occurs in response to an increased demand for consumption goods, it is called Induced Investment (e.g., when the demand for cloth increases, more money is invested for the production of cotton textiles machinery). Such investments take place when the level of income and output increases. Some investments, however, have no relation to the level of income (e.g., the construction of a factory for a *newly invented machine*). Such investments are called Autonomous Investments.

The Acceleration Principle draws attention to the fact that autonomous investment always leads to a certain volume of induced investment which produces a further expansion of income. Suppose that in a certain community autonomous investment occurs, amounting to Rs. 1 crore. The Multiplier Theory tells us that this will increase aggregate income by $4/3$ times Rs. 1 crore, if the marginal propensity to consume is $1/4$. The Acceleration Principle tells us that there will be a further addition to income brought about in the following way. When the autonomous investment of Rs. 1 crore is injected into the economy the consumption expenditure increases (in the initial stage) by $1/4$ times Rs. 1 crore, i.e., by Rs. 25 lakhs. Increase of consumption by this amount will bring forth a certain amount of induced investment. This extra investment will produce a further round of increased incomes through the multiplier effect. Thus, the Acceleration Principle points out the *secondary effects (on investment and incomes) of the original autonomous investment*. The Multiplier does not really give us the total effect of an increase in autonomous investment. To find the total effect of such an investment we must *combine the Multiplier and the Acceleration Principles*.

The ratio between the initial change of income or output and the induced investment brought about thereby is called the Acceleration Co-efficient or the Accelerator.⁵ If income changes by ΔY and as a result investment changes by ΔI , the accelerator is $\Delta I / \Delta Y$.

⁵ Kurihara, *Keynesian Dynamics*, p. 88. The Accelerator may be expressed as follows:

$$I(t) = I \left(\frac{d}{dt} Y(t) \right)$$

I is induced investment, $I(t)$ the rate of induced investment and $Y(t)$ income, each as a flow at time t . Allen, *Mathematical Economics*, p. 62.

The Accelerator may also be called the Marginal Propensity to Invest because it tells us how investment changes in response to change in output.

Some writers treat the acceleration principle as *a theory of investment*. From the Acceleration Principle it follows that, "*fixed investment depends on the rate of change of output*". This can be illustrated by the following example. Let us suppose that an agricultural community possesses 1,000 tractors and that a tractor has an average life of 10 years. The supply of tractors in that community can be kept constant by producing 100 tractors per year. Suppose that the demand for agricultural products in that community increases and it is found necessary to increase the total supply of tractors by 10%, so that at the end of the first year 1100 tractors may be available. This will necessitate the production of 200 tractors in the first year : 100 for replacement and 100 for the new demand. Thus the production of tractors must increase from 100 to 200. An increase in the total demand for tractors by 10% necessitates an increase of production by 100%. Capital investment must increase correspondingly. If the demand for agricultural products remains steady at this level the number of tractors required in the second year will be 1/10 of 1100, i.e., 110 (the amount required for replacements). Thus although the demand for agricultural products is at a higher level the tractor industry does not find it possible to maintain production at the higher level of 200. Its output falls from 200 in the first year of expansion to 110 in the second year. The output of tractors could have been maintained at 200 per year if the demand for agricultural products had continued to expand instead of becoming steady. Thus we find that changes in the demand for tractors depend *not on the absolute level of the demand* for agricultural products but *on the rate of change of such demand*. From this illustration we can conclude that capital investment depends on the rate of change of output.⁶

RECOMMENDED READINGS

1. Keynes, *General Theory of Employment, Interest and Money*.
2. Harris and others, *New Economics*.
3. Lerner, *Economics of Employment*.
4. K. Kurihara, *Monetary Theory and Public Policy*.
5. K. Kurihara, *Keynesian Dynamics*.
6. A. C. L. Day, *Outline of Monetary Economics*, Chs. 5-7, 23.
7. Samuelson, *Economics*, (9th edition), Chs. 11, 12, 13, 18.

⁶ A. C. L. Day, *Outline of Monetary Economics*, Ch. 23.

EXERCISES

1. Write explanatory notes on the following :

(a) Propensity to consume (b) Marginal efficiency of capital (c) the multiplier (d) Full employment (e) Secular Stagnation (f) the Acceleration Principle (g) Underemployment equilibrium.

2. "Aggregate investment always equals aggregate saving." Discuss. (C.U. B.A. '66).

3. Comment on the statement that, "The fundamental psychological law is that men are disposed, as a rule and on the average, to increase consumption as their income increases but not by as much the increase in their income." (C.U. B.A. '66, '68).

4. What do you understand by the multiplier and acceleration principles? (C.U. B.A. '65, '68, '71).

5. Define the term marginal efficiency of Capital. Does it influence the level of investment? (C.A. Final, Nov. '72).

6. Describe the factors that determine the level of employment in a country. (C.U. B.A. '69, '71, '73).

7. Discuss the factors on which the propensity to consume of a community depends. Why is the concept important in economic analysis? (C.U. B.A. '69).

8. Discuss the role of savings and investment in measuring the level of national income. (See C.A. Nov. '69).

9. Define "Effective Demand". State the factors on which it depends. (See C.A. May '72).

10. What is full employment? What are the reasons for under-employment? (C.U. B.A. '74).

CHAPTER 34

UNEMPLOYMENT, FULL EMPLOYMENT AND FISCAL POLICY

TYPES OF UNEMPLOYMENT

Unemployment, in the sense of *lack of employment*, may be either Voluntary or Involuntary. People voluntarily unemployed are (i) rich people who have no need to work (ii) social parasites like thieves and cheats who have no desire for honest work and (iii) the "unemployables" who, because of disease, age or other reasons are unable to work. The "idle rich" and the "lazy poor" are cases of voluntary unemployment. Pigou includes within this class, persons who will not work because the current wage rates are low.

The second type of unemployment, Involuntary Unemployment, includes workers who are willing to work at current wage rates but are unable to find work. Such unemployment may be subdivided into the following types :

1. **Seasonal.** In some industries work cannot be maintained at the same volume throughout the year (*e.g.*, agriculture, house-building etc). In some cases demand varies erratically (*e.g.*, dock labour work). Persons following such occupations remain unemployed or under-employed during part of the year. Seasonal unemployment can be defined as, "unemployment or under-employment caused by the time-pattern of a particular occupation".¹

2. **Structural or Technological.** Unemployment caused by changes in industrial organisation or technique is called Structural or Technological unemployment. The discovery of a new machine or a new process of production may reduce the number of workers required. Unemployment caused by decline of old industries and migration of industries from one region to another may also be included within this category.

3. **Cyclical.** Unemployment which occurs during the depression stage of business cycles is called cyclical unemployment.

4. **Frictional.** Some writers use the term Frictional Unemployment to include all cases where men are temporarily out of work because of imperfections in the labour market. Such unemployment may be due to immobility of labour, seasonal nature of some work, shortage

¹ Dr. B. Datta, *Economics of Industrialisation*.

of materials, breakdown of machinery, ignorance of job opportunities and industrial re-organisation.

5. **Disguised Unemployment.** Mrs. Robinson used the term Disguised Unemployment to mean lack of work of the type that would fully utilise the degree of skill possessed by the worker. The average Indian cultivator, who has work for only about six months in the year, suffers from disguised unemployment.

6. **Under-employment.** American writers use this term to mean less than full employment. The term can also be used in the same sense as disguised unemployment.

EFFECTS OF UNEMPLOYMENT

Evils. The evils of unemployment are enumerated below.

1. Unemployment involves a great *wastage of productive power*. The national output will be increased if unemployed labourers are put to work.

2. Unemployment has a *bad psychological effect* on the worker.

3. Unemployment causes *physical distress* from hunger and other wants and lowers the standard of living.

4. Unemployment creates disrespect for law and order and makes men willing to adopt *violent methods* of removing poverty and distress. The growth of fascism in Germany and Italy, during the nineteen-thirties, was largely due to the existence of a large volume of unemployment.

Benefits. A. P. Lerner² summarises the benefits of full employment, which means a minimum of involuntary unemployment, under the following headings, "The economic gains from full employment are enormous. Full employment yields the individual economic security. Security promotes progress. (Full-employment) contributes to human dignity, weakens non-functional discrimination; is essential to protect democratic society against fascism and communism; may prevent war; (and) revive the spirit of liberalism".

CAUSES OF UNEMPLOYMENT

Special Causes. There are *special causes* of each type of unemployment.

Voluntary unemployment is easy to explain. The idle rich remain unemployed because they *do not require work*; thieves and cheats, because they *do not desire work*; old and disabled persons, because they *cannot work*.

² Lerner, *Economics of Employment*, Ch. 3.

Seasonal Unemployment is due to (i) seasonal variation of demand and (ii) seasonal variation of supply. Some commodities are demanded only in particular seasons, e.g., ice-cream. People engaged in supplying demand of this type have seasonal employment. Some commodities can be produced or supplied only in particular seasons, e.g., sugarcane. Producers of such commodities have a seasonal employment and are unemployed during the rest of the year.

Cyclical Unemployment is unemployment occurring during recessions and depressions. Such unemployment is due to the cyclical variation in the conditions of business and production which occur in capitalistic countries.

Frictional Unemployment is due to the imperfect mobility of labour. There is usually a time lag between losing one job and getting another.

Under-employment and Disguised Unemployment are characteristics of under-developed countries. They are due to (i) deficiency of resources which are necessary to employ effectively the available supply of labour (e.g., shortage of land), (ii) excessive population growth, and (iii) low rate of economic growth.

Structural or Technological Unemployment is caused by the introduction of new technology, e.g., automation, or new methods of organisation.

Machinery creates unemployment by displacing labour. Machinery is sometimes capital-saving, i.e., sometimes it reduces the amount of capital required for producing a thing. In the majority of cases, however, machinery is labour-saving, i.e., it reduces the number of labourers required. The introduction of automatic telephones, for example, reduces the number of telephone operators necessary and therefore creates unemployment.

According to many economists the unemployment-effect of machinery is only temporary because in the long run the displaced persons will find employment because of the following reasons :

- (a) Some workers will be retained in the old firm (where the machine has been installed) to look after the new machine.
- (b) Some workers will find employment in the machine making industries, because such industries will be expanding.
- (c) Machinery reduces cost. Therefore the price of the article, in the production of which a new machine has been introduced, will fall. The expenditure of consumers will be reduced. This will leave more money in the hands of the consumers and this money will naturally be used for the purchase of other commodities and services. The demand for all products will increase and will necessitate the employment of more workers.

The aforesaid effects, however, will take a long time to work out perhaps exceeding the life span of the displaced workers who will suffer considerable hardship.

Statistics show that unemployment created by the use of machinery (which is a variety of what is known as technological unemployment) is a small part of the total unemployment. The problem of unemployment cannot be solved banning the use of machinery. Such a course of action will reduce the total output of the community and the total income. The total volume of employment will then be so reduced that the workers will be worse off than before.

Automation. The word automation is popularly used to denote the use of automatic machines like electronic calculators, computers, etc., to replace or augment human labour.

Automation displaces large numbers of labourers and are therefore disliked by labour organisations. The use of automation is increasing rapidly for the same reasons for which the use of machinery became popular from the time of the Industrial Revolution in Great Britain. Automation, like other machinery, increases productivity and reduces cost. Automation may be regarded as a more intensive use of machinery in production.

There is no doubt that Automation creates unemployment in the *short run*. But machinery always has this effect and it is not impossible to go back to a machine-less age. Many economists (for example Samuelson³) argue that the unemployment caused by Automation may be cured by suitable action by the Government whereby new avenues of employment are created to absorb the persons displaced by Automation. This can be done by appropriate monetary and fiscal measures. (See p. 542).

The Classical Theory of Unemployment. According to the Classical Theory, the volume of employment, the marginal productivity of labour and the rate of wages depend upon one another. The volume of employment depends on the rate of wages just as the volume of sales of a commodity depends on its price. If the price of a commodity is sufficiently low the entire supply will be sold, however large it may be. Similarly, if the rate of wages is sufficiently low all labourers will be employed. It follows therefore that, apart from frictional unemployment, *all unemployment is voluntary, i.e., due to the refusal of the labourers to accept sufficiently low wages.* Unemployment exists because the collective actions of labour unions and government intervention creates an imperfect labour market where wages are not free to fall to their competitive levels. The remedy of the problem is to lower wages. (See Pigou Effect, p. 518).

³ Samuelson, *Economics*.

The Classical theory of unemployment, and its solution, is unacceptable for two reasons. *Firstly*, it is unsound in theory. Keynes has shown that the volume of employment is determined by effective demand and not by wage bargains between employers and workers. *Secondly*, it is impractical. In a modern democratic country, with strong trade unions, wages cannot be reduced to very low levels.

The Keynesian Theory of Unemployment or the Demand Deficiency Theory. Keynes' explanation of unemployment follows his general theory of employment. According to him the volume of employment depends on *effective demand* which depends upon the total expenditure of the community on consumption and investment. (See p. 523.) When total spending becomes less, unemployment occurs. The remedy is to make up the deficit in public spending by government spending.

REMEDIES OF UNEMPLOYMENT

Various remedies have been suggested for removing unemployment. A list of the possible measures is given below.

1. According to Classical economists the remedy of unemployment is *reduction of wages*. This is both unsound in theory as well as impracticable.
2. Seasonal unemployment can be remedied by *reorganisation of industries* so that they dovetail into one another. Provision of suitable subsidiary occupations to agriculturists will considerably reduce unemployment and under-employment among them.
3. Various remedies might be suggested for frictional unemployment, *viz.*, *labour exchanges*, where workers will get information about jobs ; *decasualisation*, *i.e.*, conversion of casual workers (like dock-labourers) into permanent workers on a weekly or monthly wage basis ; and *increasing the mobility of labour* by measures like spread of education, cheaper transport and assisted migration.
4. Cyclical unemployment can be tackled by suitable *monetary policies* or by provision of *public works*. (See below under Fiscal Policy).
5. The remedy for under-employment and disguised unemployment is the *creation of new employment opportunities*. In under-developed countries this can be done by accelerating the *pace of industrialisation*.
6. The unemployables, old men and disabled persons, cannot be given work but should be provided with *government assistance*.
7. *Social Insurance Schemes* like sickness and unemployment insurance, old age pensions etc., are essential for relieving physical distress among the poorer classes. They have been adopted in all progressive countries.

8. According to Keynes *the remedy of unemployment is to secure full employment*. Full employment means the maximum possible employment for all resources available in the community, including labour. Full employment can be secured by *increasing Government expenditure*, so that effective demand is kept at a high level. This can be done by an appropriate *monetary and fiscal policy*.

Conclusion. If full employment is continuously maintained there will be very little cyclical variation of employment and therefore no business cycles of the traditional type. (See next chapter.) The policy of *increasing Government expenditure*, according to Keynes, will cure both unemployment and business cycles. The policy is called, "Contra-cyclical Fiscal Policy" by Keynes; "Functional Finance" by Lerner; and "Compensatory Fiscal Policy" by Hansen. The concept of full employment and the methods of securing it are discussed below.

THE CONCEPT OF FULL EMPLOYMENT

Full employment is a term popularised by Keynes. When in an economy, *involuntary unemployment is at its minimum possible level*, we have full employment. From the definition it follows that even under full employment the following types of unemployment will remain :

1. Some amount of *voluntary unemployment*, e.g., the "idle rich".
2. *Frictional unemployment*. In a dynamic society there must be some amount of transitional unemployment caused by shifting of jobs, decay of old industries, growth of new industries, regional transfers of industries etc. Hansen estimates that in U.S.A. the normal volume of this type of unemployment is 2 to 3 millions.
3. Unemployment which is enforced by the *social customs and institutional arrangements of a country*. These relate to hours of work, the minimum school leaving age, the age of retirement etc. People *below* the school leaving age and people *above* the age of retirement are necessarily unemployed.

4. The "*unemployables*", e.g., sick and diseased persons.

When all persons other than those falling within the above groups are employed, together with the necessary amount of other resources, we have full employment.

Kalecki⁴ points out that full employment as defined above takes no account of the rate of wages. There may be Full Employment, in the sense of minimum involuntary unemployment, in an authoritarian state where people are forced to work on inadequate remuneration. There used to be full employment in the slave states of

⁴ *The Economics of Full Employment*, Oxford University Institute of Statistics.

ancient times. Keynes however meant by full employment a situation where all persons able to work, get work, at *reasonable wages*.

THE POLICY FOR FULL EMPLOYMENT

The Classical economists assumed the existence of full employment of all resources including labour as a condition of equilibrium. Keynes showed that equilibrium is possible at full employment or below full employment. In the latter situation the volume of employment and income are less than what they might be under the former. It is the duty of the Government to shift the economy from an under-employment equilibrium to the full employment equilibrium. This can be done by an appropriate combination of monetary and fiscal policy.

Influence of Monetary Policy on Income Determination and Employment. The supply of money can be increased by the central bank of the country by measures like open market operation, variation of the reserve ratio etc. These measures increase bank reserves. The banks lend more and credit expands. As more money is available, interest rates fall. Low interest rates lead to the expansion of investment. The schedule showing the relationship between interest and investment goes up to a higher level. It can also be said that the marginal efficiency of capital goes up.

In Fig. 74 (see p. 524) investment expenditure is shown by ES and consumption expenditure by MS. The effect of increased money supply and low interest rates is to increase ES. But MS also is increased. The reason is that when interest rates go down, the value of assets like Government securities, bonds, house property etc. goes up. When the value of assets (or wealth) go up, people are inclined to spend more. Therefore the CC^1 line goes up. Increase of ES and MS makes the $C+I$ line move up. The equilibrium point E therefore moves towards the full equilibrium point W. There is expansion of employment and increase of income. Samuelson summarises the process by the following formula.

$M \text{ up} \rightarrow i \text{ down} \rightarrow I \text{ up} \rightarrow \text{GNP up}$

[M—money supply ; i—interest rate ; I—investment].

At the fourth stage, employment is also up. The process of increasing M may go on till GNP reaches the full employment level. Up to this point there is no inflation because up to this point the supply of goods is increasing owing to the use of resources previously unemployed. If money supply increases beyond full employment, there will be inflation. (See, p. 414). When money supply is contracted, the effects are reversed. So monetary policy can also be applied to fight inflations and booms.

Defects : Monetary policy alone is not enough to cure depressions. It may not work during very great depressions. In such times we find interest rates already very low, plenty of money in the hands of banks and financiers, but no investment opportunities. So to achieve and maintain full employment and to cure the extremes of business cycles (dampen them) it is necessary to supplement monetary policy by fiscal policy.

Influence of Fiscal Policy on Income Determination and Employment. Fiscal Policy means the policy of the Government regarding Taxation and Expenditure. The total volume of expenditure in the community can be increased by the right type of fiscal policy. In Fig. 74 the $C+I$ line shows the aggregate expenditure of the community. It can be raised to a higher level by fiscal policy. The result will be to shift E towards W , the full employment equilibrium position. The fiscal policy necessary for the aforesaid purpose includes (1) Construction of new Public Works, (2) Welfare expenditure by the Government, and (3) Reduction of taxation. These measures are discussed below.

1. Construction of Public Works. The term Public Works means assets like roads, canals, houses, etc. built by the Government for the benefit of the public. When a public work is undertaken, some people get employment. Their income increases and the $C+I$ schedule is raised upwards.

The case for public works can be supported by common sense. From the standpoint of the community, unemployed labour is a loss. There will be gain if they produce something instead of nothing.

The case for public works is reinforced by multiplier analysis. (See p. 531). Each unit of public spending will add several units to the national income. Government expenditure will permanently raise the national income by multiplier times the expenditure in question. But the following conditions must be satisfied :

(i) The expenditure is "new" expenditure. If a public work is financed by taxation, or borrowing from private individuals, there is no "new" expenditure. The Government spends what might have been spent by the persons taxed and the persons from whom the money was borrowed. Therefore a public works programme will raise the $C+I$ schedule only if it is financed by the creation of new money. New money is created when the Government prints new money or borrows from the Central Bank. The process is described as Deficit Spending or Deficit Financing. (See Ch. 37).

(ii) The Government expenditure must not involve curtailment of any private expenditure. For example if the Government starts providing a service which was already available in sufficient amounts from some private enterprise, the latter will have to close down. This

will involve diminution of employment and income of some persons. The expenditure programme of the Government must aim at creating a *net addition* to the total expenditure of the community.

(iii) There must not be any change in the size of the Multiplier. If, as a result of the Government expenditure the multiplier becomes smaller, the income generating power of the expenditure will be reduced. The size of the multiplier depends on the propensity to consume. Therefore this condition implies that the Government expenditure must not have any adverse effects on the community's propensity to consume.

Keynes does not advocate Government expenditure merely as a method of restoring equilibrium. At one time it was thought that government expenditure was like "pump-priming". It pushed an economic system in unstable equilibrium back on the road to full employment from which it had deviated owing to some accident or unexpected event. Keynes' theory is that an economic system with underemployment may be in stable equilibrium. Repeated pressure in the form of continuing public investment is required to move the system towards full employment and prosperity.

It is to be noted that according to the Keynesian theory of employment, the purpose for which government moneys are spent is not at all material. *Any sort of expenditure will increase incomes and drive the economy towards full employment.* Thus if men are employed to dig holes in the ground and then fill them up and are paid for such work, total income increases and the gap between investment and income is reduced and the attainment of full employment facilitated.

Nowadays, however, people do not like hastily planned and wasteful public works spending. Since the right type of public works can be very useful, the Government need not employ people in projects that yields nothing. Any number of useful projects can be thought of, *e.g.*, slum clearance, road building etc. So there is no sense in wasting resources, including man power, on useless projects.

Public Works, as a method of employment expansion, suffers from one drawback. A programme of public works takes a long time to plan and start. So they may not be useful against a short run recession. Before the plan starts functioning, the recession may be over and a boom may have commenced. In this case the new income generated by the Government expenditure aggravates the boom. But in any long term anti-depression and stabilization programme, public works must find a place.

To sum up, the Keynesian full employment policy induces a public works policy in which such works are financed by new money. This involves deficit budgets. The policy may be abandoned in case the country is threatened with over-expansion and booms. In such

times surplus budgets are necessary to withdraw purchasing power from the public and reduce their disposable income.

2. **Welfare expenditure.** It is possible for the Government to increase total spending in the community by various kinds of welfare measures *e.g.*, *relief grants*. There are two difficulties in this type of measure. (i) The expenditure may be wasteful. (ii) It is very difficult to terminate such programmes when the need for such extra expenditure no longer exists, *e.g.*, when full employment is achieved and the country is threatened with over-expansion and inflation.

3. **Reduction of taxes.** When taxes are reduced, the disposable incomes of the tax-payers are increased. This increases their propensity to consume and the C+I schedule is raised. Reduction of taxation may be so planned as to encourage investment, *e.g.*, increasing depreciation allowances, exempting new enterprises from taxation etc. The difficulties in this programme are (i) it takes time to reduce taxes, because they must be sanctioned by the legislature, and (ii) it may be difficult to restore the taxes when there is no longer any need for expansion.

Other measures. The Monetary and Fiscal Policy measures, enumerated above, include Cheap Money Policy, Government Spending, and Variation of Tax Rates. According to Hansen⁵ and others, the following further measures are necessary to maintain full employment, without inflation.

1. *Wage Policy* : The level of money wages should be kept stable.

2. *Improvement of consumption standards* : Increase of consumption expenditure increases employment and income. Consumption will be increased if inequality of income and wealth is reduced. The richer classes consume less than their income whereas the poorer classes cannot consume what they want for lack of adequate income.

3. *Encouragement of private investment* : The private sector is fairly large, even in mixed economies like those of U.K. and India. Investments in this sector must be encouraged if it is desired to increase aggregate investment.

Co-ordination between monetary and fiscal policy : An expansionary fiscal policy involving high Government expenditure with deficit financing, automatically leads to increase of money supply and lower interest rates. The Central Bank should not attempt a credit squeeze or try to raise interest rates when the Government is expanding expenditure with a view to increase employment. It is, however, not necessary to put monetary and fiscal policy under the control of the same agency. It is enough if co-ordination between the two is secured.

⁵ Hansen, *Economic Policy and Full Employment*.

Functional Finance. A. P. Lerner,⁶ following Keynes, puts forward three rules for governing what he calls, "the economic steering wheel".

"Taxing and spending, borrowing and lending, and buying and selling constitute the six fiscal instruments of the government. These are the instruments of Functional Finance whose objective is the task of adjusting investment and consumption to give full employment."

1. "The government shall maintain at all times a reasonable level of total spending in the economy". If private spending is low government should lower taxes or itself spend more. If private spending is high, taxes should be raised or public expenditure cut down.

2. "The government shall maintain that rate of interest which induces the optimum rate of investment". The rate of interest can be controlled by government borrowing and lending.

3. "The government press shall print any money that may be needed in carrying out these rules." Principles of so called "sound finance" like balancing the budget or limiting the national debt are to be abandoned.

Objective of Fiscal Policy. Fiscal policy should aim at securing a high employment economy with a high rate of economic growth, without inflation or deflation. If full employment is achieved, cyclical unemployment will be eliminated.

According to Hansen the policy of public expenditure (which he calls 'Compensatory Fiscal Policy') "is not a one way programme. Properly managed it is always on the job prepared to fight inflation no less than deflation."

It can therefore be said that the right type of fiscal policy stabilises the economy.

Effectiveness of Fiscal Policy. Fiscal policy prescriptions of the type mentioned above have been found to be very effective in U.S.A. and other advanced countries. In U.S.A. during the last 40 years there did not occur any great depression or boom. There have been several mild recessions and booms but they were quickly overcome by appropriate action on the part of the Government. In India the Famine Relief Code, which involves construction of public works to give employment to people when famine breaks out, has been found to be remarkably successful. Even if business cycles are not fully conquered, fiscal policy together with monetary policy, can reduce the intensity of depressions and booms.

Samuelson says that, "by means of appropriately reinforcing monetary and fiscal policies, our mixed-enterprise system can avoid the excesses of booms and slumps and can look forward to healthy

⁶ Lerner, *Economics of Employment*, Ch. 1.

progressive growth." He describes this conclusion as the "Grand Neo-classical Synthesis".

Criticisms of the Keynesian Policy for Full Employment. Although most modern economists agree that Full Employment should be the objective of economic policy, some doubts have been expressed whether fiscal policy alone will be sufficient to achieve the desired end. The following is a list of the main criticisms.⁷

1. A monopolist can by curtailing output reduce employment thereby necessitating further government investment. To follow the policy of full employment the government *should have full control over monopolies.*

2. If wage earners combine to raise wage rates, employment will be reduced. Therefore, to secure full employment *the rates of money wages must be controlled.* Keynes in his *General Theory* discussed both these points and agreed that the government should control all forms of monopolies, whether of business or of labour.

3. Keynes was so pre-occupied with fiscal policy that he paid *insufficient attention to monetary policy* which is an useful weapon to fight cyclical unemployment.

4. According to some writers, any departure from the "sound" rule of balanced budgets, would *"open the floodgates of government extravagance"* and would produce serious evils.

5. The possibility of government investments in large amounts *may retard private investment.* The manufacturers may be afraid of government competition.

6. Some writers are of opinion that the Keynesian remedy for unemployment *depends too much on private initiative* and is therefore inadequate. Thus W. W. Rostow⁸ writes as follows: "Structural unemployment can be defined as resulting from an inappropriate balance of resources; its existence stems by definition, from a prior failure of investment to flow in appropriate directions, or from a failure of the working force to adjust appropriately in terms of locations and skills. Persistent structural unemployment therefore cannot be dealt with simply by a general increase in the level of effective demand Its cure demands policy directed not merely to the level of effective demand but also to the character of effective demand". Rostow says that the government should not confine its activities to spending money but should endeavour to increase the technical knowledge, mobility of resources, entrepreneurial skill, etc.

7. Keynesian Fiscal Policy and Under-developed Countries. In under-developed countries, like India, industrial expansion is held up by bottlenecks like want of capital goods, shortage of technical

⁷ See Ellis, *A Survey of Contemporary Economics*, Ch. 5.

⁸ W. W. Rostow, *American Economic Review*, Vol. XLII.

personnel etc. In such countries full employment of resources, in the Keynesian sense, will leave a large residue of involuntary unemployment, because many labourers will have no work to do for want of equipment. *A large government expenditure, by itself, will serve no useful purpose* in such a situation. There must be positive efforts to eliminate the bottlenecks so that a higher level of employment can be secured.

As regards undeveloped countries, Rostow remarks that, "When adequate skills are lacking, when mobility of labour is low, measures simply to expand effective demand are of limited use, if not intrinsically dangerous."

RECOMMENDED READINGS

1. Hansen, *Economic Policy and Full Employment*.
2. Lerner, *Economics of Employment*.
3. Samuelson, *Economics*, (9th edition), Chs. 13, 18, 19.
4. Benham, *Economics*, Ch. XXIII.

EXERCISES

1. What are the principal measures which a Government may undertake for maintaining employment at a high level? (C.U. B.A. '61, '65; C.A. May '69).
2. Discuss how fiscal policy may be used for the control of cyclical fluctuations (C.U. B.A. '65; B.Com. '65).
3. Explain the concept of "Full Employment" in a free society. Discuss the various methods of reducing unemployment. (Mysore, B.Com. '67).
4. Explain how public expenditure can be used to influence the level of economic activity. (C.A. May '71).
5. To what extent is it possible to control cyclical fluctuations by means of a flexible public works policy? (C.U. B.A. '72).
6. Explain the different types of unemployment. Discuss some of the principal measures that a government may adopt for the relief of unemployment. (C.U. B.Com. '73).
7. Show how fiscal policy be used as the instrument for promoting economic growth with stability. (C.A. Final, Nov. '72).

CHAPTER 35

BUSINESS CYCLES

DEFINITION AND TYPES OF BUSINESS CYCLES

Definition. The term Business Cycle or Trade Cycle is used to denote the *fluctuations in economic activity which occur in a more or less regular time-sequence in capitalist societies*. The volume of economic activity in a community is shown by various indicators, viz., the volume of employment, price level, output and income. When these indicators are plotted on a chart, the graph looks like a wave. This shows that economic activity rises and falls in a regular manner. *Each movement, the rise and fall taken together, is called a Trade Cycle or a Business Cycle.*

Types. There are three distinct types of business cycles.

1. *The Long Waves or the Kondratieff Cycles.* These are long period cycles of 50 to 60 years. So far only two full waves 1789-1814, 1814-1896 and the first half of the third wave 1896-1920 have been fully studied. Statistical evidence collected by Kondratieff and others show that there was a long period rise and then fall of prices, interest and employment during these periods. The regularity of the movements seems to show that they were not due to random causes. Schumpeter ascribes the upward movement of the first cycle (1789-1814) to the industrial revolution; of the second cycle (1814-1896) to the use of steam and steel; and the third cycle (1896-1920) to the discovery of electricity, the development of chemistry, and the use of motors.

2. *Short Waves* of 9 to 10 years. These are called Jugler cycles from the name of the man who first drew attention to them. Jugler cycles occur with great regularity and have been studied in detail by economists. Most of the theories evolved by economists regarding business cycles relate to this type.

3. *Shorter Waves* (also called Kitchin cycles). It has been found that each Jugler is convertible into three shorter cycles of 40 months each.

THE PHASES OF A JUGLER CYCLE

A typical short cycle has four more or less distinct phases—*Depression, Recovery, Prosperity and Recession*. These phases can be shown in a diagram as in Fig. 76. Different writers use different terms for these phases but all are agreed on the fact that there are four phases

The four phases (Depression, Recovery, Prosperity, Recession) constitute one Cycle. They repeat themselves in the order shown. The characteristic features of each phase are described below.

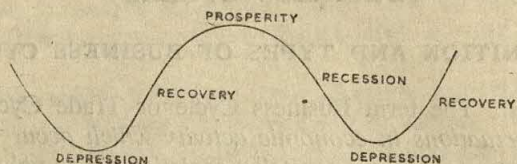


FIG. 76

1. **Depression.** During depression economic activity in the community is at a low level. Unemployment is high. Incomes are low. Consumption expenditure is much reduced. Investment is low and there is little demand for producer's goods. Prices tend to go downwards. Enterprise is discouraged. Income, employment and output decline cumulatively owing to the multiplier effect.

After depression has continued for a time, certain structural changes occur. Weak enterprises are liquidated or reorganised. Old debts are paid off and banks again become strong. The economy comes back into equilibrium on the basis of a lower volume of employment and income. Now the process of recovery starts.

2. **Recovery.** During a depression, households and business concerns keep their purchases low. So manufacturers do not get sufficient orders to produce. But after depression has lasted for some time the semidurable goods wear out and have to be replaced. Buying gradually increases and as the sellers' stocks are gradually reduced, more orders are placed on the manufacturers. Industry begins to revive. Once begun, the recovery grows cumulatively. An increase in the business of a trader makes him readier to renew his equipment and order fresh goods from the manufacturer. Employment in the factories increases and more income is generated which leads to further consumer purchases. The improving state of trade produces a more cheerful state of the mind among business men. In the language of Keynes "the marginal efficiency of capital" increases and gives a fresh impetus to the improvement in trade. The phase of the cycle when these things happen is called Recovery. Recovery is sometimes accelerated by non-business factors like a war or a good harvest.

3. **Prosperity.** As the forces producing recovery gather strength profits tend to rise. The reason is that, while prices of raw materials and the rate of interest often rise faster than selling prices, the prices of labour (*i.e.*, wages) usually lag far behind and overhead costs remain

fixed by old contracts regarding salaries, leases etc. The increase of profits combined with the general feeling of optimism leads to larger investments which in turn increases employment, income and the volume of trade. This situation is called Prosperity. The peak point of Prosperity is marked by a greatly accelerated economic activity and is called a Boom.

4. **Recession.** Towards the later stages of prosperity there occurs a gradual accumulation of factors which undermine the prosperity. These factors are as follows :

(i) *The cost of production gradually increases.* Prices of labour and of raw materials rise in response to increased demand. Labour efficiency declines because shortage of labour supply forces employers to appoint undesirables and make other labourers work overtime. Overhead costs increase when the limit of existing capacity is reached. Wastage increases owing to pressure of work.

(ii) *The money market becomes tighter.* The larger volume of trade creates greater demand for cash and the rates of interest rise thus putting a check on investments.

Higher costs of production and higher rates of interest begin to reduce profits. To keep up profits employers try to raise selling prices but it is impossible to keep prices rising continuously. Again, the bulk of business and industry is carried on with borrowed money. At the height of the "boom" the total volume of credit is usually, very great. But when interest rates begin to rise, and expected dividends do not materialise owing to higher costs of production, the cautious creditors begin to feel nervous. It becomes difficult to obtain fresh loans. Sometimes banks are unable to expand credit owing to shortage of cash reserves. Demand is made for repayment of old loans.

The news that all is not well soon spreads and a feeling of nervousness comes into existence. Employers concentrate on maintaining solvency rather than making profits. In consequence, the volume of new orders falls off, expansion gives place to contraction, employment falls and prices of securities and commodities fall. This situation is described as a Recession.

Sometimes all these things happen slowly and there are no widespread business failures or other disturbances. This may be called a 'mild' recession. When the recession is of a severe type it is called a "Crisis". Sometimes the change from prosperity to crisis takes place abruptly causing great disturbance to business. This is called a "Panic". Panics usually start from the failure of some big enterprise which spreads alarm among the public. Runs occur on banks, credit is refused, even to solvent firms, commodity markets become disorganised by sacrifice sales, stock exchange prices fall rapidly and the volume of

business is violently contracted. The economy enters into the phase of depression.

CHARACTERISTICS OF BUSINESS CYCLES

The characteristics of Short Waves of business cycles or trade cycles are stated below.

1. Details of different cycles differ though the general pattern is the same. "All the recorded cycles are members of the same family, but among them there are no twins". (Pigou).

2. The time periods of the phases of Short Waves differ slightly, though each cycle covers approximately 9-10 years.

3. The phases of the cycle tend to appear in all types of business though in varying degrees, e.g. production and prices.

4. Output and employment, in durable goods and capital goods, fluctuate more than in consumption goods.

5. Changes in total output and employment are generally associated with changes in currency, credit and velocity of circulation of money.

6. Profits fluctuate more than other incomes.

7. Business cycles are international in character though all countries are not affected to the same extent.

8. "The trade cycle is primarily an employment cycle". The volume of employment varies at different points of the cycle. It is lowest at the crisis-panic stage, grows steadily during the recovery and is largest during prosperity. Output and income naturally vary with employment. But there are various other things also which fluctuate during trade cycles, e.g., prices, interest rates etc. The trade cycle may be called primarily an employment cycle because the effects on employment are serious and far reaching and because the latest explanation of trade cycles is based on Keynes' *General Theory of Employment*.

CAUSES OF BUSINESS CYCLES

Innumerable theories have been formulated to explain business cycles, each theory ascribing them to a particular cause or group of causes. The suggested causes, in a summary form, are stated below. [The theories of business cycles have been discussed in the following sections.]

1. Jevons—Sun-spots which vary in intensity in a cyclical way.
2. Hawtrey—Expansion and contraction of bank credit.
3. Pigou—Variations in business confidence.
4. Hobson—Under-consumption or oversaving and inequality of income.

5. Hayek—Investments exceeding voluntary saving.
6. Schumpeter—Innovation.
7. Keynes—Variations in the rate of investment caused by fluctuations in the Marginal Efficiency of Capital.

8. Hicks—Fluctuations in autonomous investment in an economy.

The theories regarding business cycles can be divided into two classes, (i) exogenous or external and (ii) endogenous or internal. The former classes of theories are attributed to some factor outside the economic system, *e.g.* Sun-spots. The second classes of theories are attributed to factors within the economic system, *e.g.*, variation of bank credit.

BUSINESS CYCLES : THEORY OF KEYNES

According to Keynes, business cycles are caused by *variations in the rate of investment caused by fluctuations in the Marginal Efficiency of Capital*. The term Marginal Efficiency of Capital means the "expected profits from new investments". Entrepreneurial activity depends upon profit-expectations. In his business cycle theory Keynes assigns the major role to Expectations. (See p. 417).

Business cycles are periodic fluctuations of employment, income, and output. According to Keynesian Theory, income and output depend upon the volume of employment. The volume of employment is determined by three variables : the marginal efficiency of capital, the rate of interest and the propensity to consume. In the short period the rate of interest and the propensity to consume are more or less stable. Therefore, fluctuations in the volume of employment are caused by fluctuations in the marginal efficiency of capital.

The phases. The course of a business cycle, according to the Keynesian Theory, runs as follows. During the period of expansion the marginal efficiency of capital is high. Businessmen are optimistic ; investment goes on at a rapid pace ; employment is high ; and incomes are rising, each increment of investment causing a multiple increase of income. Towards the end of the period the high marginal efficiency of capital receives a setback from two directions (i) the cost of production of new capital assets increases as shortages and bottlenecks of materials and of labour arise, and (ii) owing to the abundance of output, profits are lowered below expectation. *Soon business optimism gives way to scepticism and then to pessimism.* The marginal efficiency of capital collapses with catastrophic suddenness. When businessmen find the investment expected to yield 10% yield only 3%, over-optimism gives place to over-pessimism. Employment contracts, reducing incomes still further. The downward movement proceeds cumulatively, because every decrement of investment causes a multiple decrement in income. The economy proceeds towards a crisis and depression.

Recovery begins when confidence revives, that is, when the marginal efficiency of capital again increases. This will happen after the period of time necessary for (i) the wearing out and obsolescence of a part of the durable capital and (ii) the exhaustion of excess stock of consumer goods accumulated during the depression. Gradually the growing scarcity of capital goods and consumer goods increases profits and expectation of profits. The marginal efficiency of capital revives and expansion commences. The time period of a cycle is fairly regular because the average time required for the wearing out, obsolescence and exhaustion of capital and consumer goods is more or less the same in every epoch.

Differences. The Keynesian explanation of business cycles is apparently similar to those of Pigou and Hobson (see 3 and 4 below) but actually there are great differences. The Keynesian theory, unlike those of Pigou and Hobson and many others, is based upon a logical theory of employment which finds increasing acceptance in modern times. The suggested remedies also are different. Hobson and others would cure unemployment by reconstructing the economic system, Keynes accepts the present system and recommends the adoption of a policy of increasing public investments to obtain full employment.

Criticisms : Keynes bases his theory only on internal causes of a Trade cycle. Moreover, he has developed his explanation with the help of multiplier principle simply. Whereas, a scientific explanation of a Trade cycle must consider external causes of a trade cycle and the role of accelerator in the occurrence of a Trade cycle.

OTHER THEORIES OF BUSINESS CYCLES

The important Business Cycle Theories are explained below :

1. **Climatic Theories.** Jevons and certain other writers believed that business cycles are *caused by "sun-spots" which vary in intensity in a cyclical way.* It is argued that when sun-spots grow large, less heat comes from the sun, agricultural production falls, the purchasing power of the agriculturist is reduced and depression begins. When the sun-spots grow small the converse process takes place and recovery occurs. The sun-spot theory is rejected because it seems far-fetched and because it cannot explain all the features of business cycles.

2. **Monetary Theories.** According to Hawtrey, Friedman etc. business cycles are caused by *expansion and contraction of bank credit.* Bank credit is an important part of the medium of circulation. The upward phase of a business cycle starts when the banking system creates more money, either by lowering the rate of discount or by purchasing securities. Easy money induces traders to hold more stock and place larger orders on the manufacturers. The latter expand production, purchasing more materials and employing more labourers.

The money income of the people increases, sales increase, and business expands. A boom comes into existence. But soon the cash reserves of the banks are exhausted. They now restrict credit and call in loans. Traders holding stocks on borrowed money are forced to sell quickly, prices tumble down, manufacturers get less orders and begin to discharge labourers. Unemployment ensues, money incomes are reduced, depression begins. Thus the cycle is complete.

In this analysis business cycles are attributed to the *instability of bank policy*. Hawtrey's theory however does not explain how the initial momentum towards credit creation arises nor why the expansion and contraction takes place in approximately the same length of time. According to Pigou variations in the bank money supply is a part of the business cycle, it is not the cause of it.

3. **Psychological Theories.** According to Pigou trade cycles are due to *variations in business confidence*. When the market shows signs of improving, businessmen become over-confident, placing large orders on manufacturers. A boom commences. When it is found that an over-estimate has been made, optimism gives place to pessimism and contraction of business occurs. The movement both ways is *aggravated by other factors like harvest fluctuations and bank policy* but the whole thing occurs with a regular periodicity. Pigou's theory fails to explain how optimism starts, why panics occur with great suddenness, why the movements are spontaneous over the whole field of industry and why the whole movement takes approximately 9-10 years.

4. **Under-Consumption or Oversaving Theories.** According to Hobson, business cycles are due to *under-consumption or over-saving*. In modern societies there is great *inequality of income*. When business is brisk the incomes of the wealthier classes increase but they have no occasion to spend all their income. They save the major part and invest them again in production. The supply of goods increases but the majority of the people, having little purchasing power, cannot buy them. So the goods remain unsold and depressions occur. The same theory is held in slightly different forms by Foster and Catchings, Major Douglas and others. The theory is an *explanation of depressions only*. It does not explain how booms commence. It assumes that the savings of the wealthier classes are automatically invested. If the theory was correct it would follow that during depressions prices of consumer goods would fall first; but they generally fall last.

5. **The Over-Investment Theory.** According to Hayek, business cycles are due to *investments exceeding voluntary saving*. The economic system is in equilibrium when the rate of interest is such that the value of investments is equal to the volume of savings. This

is the *natural rate of interest*. The market rate of interest, however, may sometimes fall short of this rate because of the banking system's power to create credit. When this happens investments increase, the capital goods industries are stimulated and the structure of industry changes. But this situation cannot last. Shortage of actual savings forces contraction of business and prosperity comes to an end. The over-investment theory does not explain all the characteristics of business-cycles. There is no reason why investments should exceed voluntary savings once in 9-10 years and not during a shorter period.

6. **The Innovation Theory of Schumpeter.** "Innovation" means the introduction of (i) a new product (ii) a new process (iii) a new market (iv) new sources of raw materials and/or (v) substantive changes in the organisation of business. According to Schumpeter every *innovation increases the demand for capital and other resources*. Bank credits expand and prices rise. The process is accelerated if the innovation is successful and a large number of new concerns are started. This is the period of prosperity. Next, when the products of the innovation come to the market, the demand for old products falls causing unemployment and reduced incomes. A "vicious spiral of deflation" ensues causing depression, crises and panics. Schumpeter connects long waves with major innovations and short cycles with minor innovations. The theory does not explain why the average time period of a short cycle is 9-10 years.

REMEDIES OF BUSINESS CYCLES

Business cycles have an *unhealthy effect on economic life*. Depressions, crises and panics have disastrous consequence on particular individual as also on society. Thinking men have therefore tried to find methods of eliminating them or at least mitigating their evil effects. But the remedy of an evil cannot be prescribed unless the cause is known. Economists are not yet agreed as to the cause of business cycles. So the remedies suggested vary according to the theory of causation adopted. Some of the suggested remedies are described below :

1. **Monetary Remedies.** Economists who believe that monetary causes underlie business cycles, suggest that banking policy should be so directed as to eliminate variations in the volume of credit (Hawtrey) and to maintain that rate of interest which equalises the value of investments and the volume of savings. (Hayek).

Monetary remedies of business cycles, which may be applied by the Central Bank of a country, can be divided into two types : (i) *measures for the regulation of the volume of credit money* and (ii) *on appropriate interest policy*. Within the first group will come variation of bank rate, open market operations and all other weapons in the

hands of the Central Bank. The second type of remedy contemplates raising the bank rate in times of boom so that the volume of new investments is reduced and lowering the bank rate in times of depression so that investments are encouraged.

In former times monetary policy was regarded as a major weapon against cyclical fluctuations. Keynes is very sceptical about the efficacy of monetary policy. Credit control measures can remedy business cycles only if businessmen's actions are based upon credit expectation and the rate of interest. According to Keynes, they are not. High interest rates do not reduce investments if profit expectations are high. Similarly, low interest rates do not necessarily encourage investment. Businessmen will not borrow, even at zero rates of interest, if there is no expectation of profit. Therefore, business cycles cannot be eliminated merely by varying the rates of interest. Keynes argues that business cycles are not due to monetary causes but of fluctuations in the marginal efficiency of capital. *Business cycles can only be eliminated by securing full employment through a judicious policy of investment.* But, although monetary policy cannot cure business cycles, it is not entirely useless. Keynes admits that a suitable monetary policy can assist the attainment of full employment by maintaining the rate of interest at a low level. Low interest rates encourage investment and investment increases employment.

2. **Socialist Remedies.** Socialist writers argue that business cycles are the consequences of capitalistic methods of production. So long as production is directed by private individuals operating with a profit-motive, fluctuations in economic activity are bound to occur. Stability will come when production is brought under the direct control of the State. The principal characteristic of a trade cycle is fluctuation in the volume of employment. But *employment cannot fluctuate in a socialist state* because in such a state every individual is employed. Therefore trade cycle will automatically disappear when capitalism is replaced by socialism.

3. **Increase of Buying Power.** Writers who believe that under-consumption and over-saving lie at the root of business cycles, suggest that they may be eliminated by increasing the buying power of the masses. Hobson recommends *raising wage rates* in time of boom so that a greater part of the national income may go to labour. He also recommends *reduction of inequality of wealth.*

Many quack remedies have been suggested for increasing buying power. For example, Major Dauglas and his social credit school recommended that the government should subsidise consumer purchases by printing new money.

4. **The Contra-Cyclical Fiscal Policy.** See, pp. 542-548.

5. **Direct Controls.** There are certain methods of control

(including physical controls) undertaken by the Government—Price control, Price support, Rationing, Unemployment Insurance etc.

6. **The Stabilizers.** There are certain Automatic Stabilizer e.g., changes in tax receipts, unemployment compensation and other welfare transfers, corporate savings and family savings. These factors help the stabilizing the economy and moderate business cycles. There are other stabilizers which are not automatic, e.g., discretionary fiscal policy and monetary policy. These methods must be undertaken by the Government and the Central Bank.

ARE BUSINESS CYCLES STILL ALIVE ?

Business cycles have been operating in capitalistic economies for a long time. Great depressions have occurred in 1870, 1890 and 1930. There has also been many Booms. In modern times Governments are active. Monetary and fiscal measures have been very effective. Since the last thirty years great depressions and boom did not occur. There were occasional recessions which were quickly overcome. On the other hand periods of expansion have been longer. With the policy of full employment and development, the growth-oriented economies have secured expansion. For the above reasons it has been said that, "business cycles are now dead". (See, "Effectiveness of Fiscal Policy", p. 546).

RECOMMENDED READINGS

1. Keynes, *General Theory of Employment, Interest and Money*. Ch. 22.
2. Hansen, *Business Cycles and National Income*.
3. A. C. L. Day, *Outline of Monetary Economics*, Ch. 24.
4. Samuelson, *Economics*, (9th edition), Ch. 14.

EXERCISES

1. What are Trade Cycles? Explain their important characteristics. (Mysore B.Com. '67).
2. Explain and discuss theories of Business Cycles. (C.A. May '68).
3. What is a business cycle? Indicate its causes. (Gau. B.A. '64).
4. Mention the different phases of a business cycle and point out the essential features of these phases. (Gau. B.A. '64).
5. Describe the methods that you would use for the control of cyclical fluctuations. (C.U. B.A. '66; Mysore B.Com. '67).
6. Examine the merits and limitations of monetary policy aimed at curing cyclical fluctuations. (C.U. B.A. '65, '68).
7. Is Trade Cycle a purely monetary phenomenon? If so, why so? If not, why not? (C.U.B.A. '69).
8. What is the part played by "business expectations" in business fluctuations? (See C.A. Nov. '71).
9. What do you mean by Trade Cycle? How does it arise? (C.U.B.A. '74). [See also the exercises at the end of previous chapter.]

CHAPTER 36

INTERNATIONAL ECONOMIC INSTITUTIONS

NECESSITY

Peace and prosperity of the world depends upon *co-operation in economic affairs*. In 1944, while the war was still going on, the leading nations of the world on the allied side met in a conference at Bretton Woods (in U. S. A.) and decided to form a number of international organisations. The most important of them are the International Monetary Fund and the International Bank for Reconstruction and Development.

THE INTERNATIONAL MONETARY FUND OR IMF

1. **Membership.** With the exception of U.S.S.R. and certain countries, all members of the United Nations Organisation are also members of the International Monetary Fund or the IMF.

2. **Resources.** The capital or the Fund of the IMF is made up by contributions of the member nations. The quota to be contributed by each member was calculated on the basis of the member's pre-war volume of trade and gold holdings. The aggregate capital of the Fund was originally 8800 million dollars. The quotas were subsequently increased. In January 1961, it stood at \$14,741 millions.

The quota of each member is payable in the following manner : 25% of the quota or 10% of its gold and dollar holdings (whichever is less) is payable in gold or dollars ; the rest in the member's own currency. In 1970, the quota of India was 940 million dollars.

3. **Management.** Each member country appoints a Governor but the voting powers of Governors vary. Each Governor has $(250+1)$ votes for each \$1,00,000 of his country's quota. For critical decisions the voting power is increased by one vote for each \$40,000 sales of a country's currency to other countries and decreased by similar amounts if the country is a buyer of other currencies.

The day to day management is conducted by 17 Executive Directors. Five are appointed by countries having the five largest quotas. They are U.S.A., U.K., China, France and India. The rest are elected by other countries.

The Executive Directors appoint a Managing Director who acts as their Chairman and serves as the Chief Executive of the Inter-

national Monetary Fund. The principal office of the Fund is in U.S.A.

4. **Objectives.** The objectives of the IMF are as follows :

(i) To promote international monetary co-operation. The organisation of the IMF can be used by the members for consultation and joint action relating to monetary problems.

(ii) To secure *stability in the rates of foreign exchange*.

(iii) To secure *multilateral convertibility*, i.e., conversion of the currency of any member into the currency of any other member.

(iv) To *promote international trade* by inducing member nations to avoid restrictive currency practices and barriers to trade.

5. **Functions.** The functions of the IMF can be classified under three main heads as follows :

(i) It provides *short term credit* to its members when required to meet international payments.

(ii) It arranges for *conversion of currencies*. Subject to certain limits, the currency of any member can be converted into the currency of any other member. Thus there can be multilateral payments.

(iii) It attempts to secure *co-operative stabilisation of exchange rates*, i.e., secure stability of rates of exchange through the co-operation of the members.

How the above functions are performed is described below.

Under the rules of the IMF, each member nation is required to *declare the par value of its legal tender money in terms of gold and the U.S. dollar*. This par value might be altered by 10% in either direction by the member country itself and by a further 10% with the consent of the Governors of the Fund. Such alterations are to be made only when required for correcting a *serious maladjustment* in the balance of payments of the country. Such maladjustment is shown by continuing adverse balance of payments and is called a *fundamental disequilibrium*. But the rules of the Fund do not say how many times or how frequently an alteration may be made.

The fixation of par values, subject to alterations of the above type, *automatically fixes the rates of exchange between different currencies*. When the IMF was started, the par value of the U.S. Dollar was calculated at \$35 per fine ounce (troy) of gold. The original par values have been changed later by many countries (e.g., U. K. in September 1949 devalued the £ by nearly 30%).

Spot transactions in foreign exchange are allowed within a margin of 1 per cent and *forward transactions* within such limits as considered reasonable by the Governors of the Fund. Since the Fund contains currencies of all countries it is possible for every member to secure the currency of every other member at fixed rates. The International Monetary Fund thus secures what is called "*multilateral convertibility*"

and prevents the splitting up of the world into a number of different currency areas. Rules have been laid down regarding the conversion of currencies through the Fund. A member country can *purchase foreign currencies* every year up to 25% of its quota subject to the maximum limit of 200% of its quota. The rate at which foreign currency can be purchased is $1/2$ to 1 per cent higher than the par value. The margin provides for service charges.

If the IMF holds more of a country's currency than its quota, interest has to be paid at rates increasing with the amount of the excess and the period of time for which it is held.

A currency may be *declared "scarce"* by the IMF, in which case the country concerned may be asked to sell such currency to the Fund for gold or lend it. So long as official "scarcity" lasts other members can impose restrictions on dealings with such a country.

6. **IMF and the Solution of International Liquidity Problem : Special Drawing Right (SDR).** The international liquidity problem has assumed a serious proportion. The problem has arisen out of a gap between the expansion of world trade and the growing shortage in international reserve. To solve this, the SDR Scheme has been agreed to at Rio de Janeiro Conference of 1967 by the 'Group of Ten'. (The U.S.A., the U.K., Belgium, Canada, the Federal Republic of Germany, Italy, the Netherlands, Sweden, France and Japan.)

The Scheme of Special Drawing Rights aims at establishing a new reserve facility to the IMF member countries. These reserves will supplement the present reserve assets of the members. Under this scheme, a deficit country will have a special Drawing Right on a surplus country in exchange for an equal amount of convertible currency. Generally, currencies are acquired from countries possessing sufficiently strong balance of payment or reserve position at the IMF. The participating countries can use the Rights in international settlements. The Scheme is universal in nature, so the special Drawing Rights is to be given to all the members in proportion to their existing quotas in the IMF. No country can however, exercise the Right more than twice the allocation for it. The shares in the total allocation will be as follows : U.S.A. will have 22 per cent., U.K. 10 per cent, India 3.76 per cent etc., of the allocation. The total allocation will be for U.S. \$3.5 Billion in 1970 (the first year) and thereafter for U.S. \$3.0 Billion in the two succeeding years in the first phase. In the years 1970-1972, India received \$126 million.

The new scheme introduces pure fiduciary reserve creation. It is therefore, quite flexible and independent of monetary gold. So the scheme is christened 'Paper Gold'.

7. **Duties of Members.** The rules of the Fund impose certain obligations on the members. Restrictions on payments, discriminatory

currency practices and multiple exchange rates are prohibited, Gold purchases and sales are to be conducted at the rates fixed by the Fund. Every member must provide information to the Governors as and when required. A transitional period has been fixed during which exchange control is permitted but they are to be withdrawn as soon as possible. The Fund cannot be used for capital transfers or for the settlement of war debts like the Sterling Balances of India. A country violating the regulations of the Fund cannot use the resources of the Fund and its membership can be cancelled.

8. **IMF and the Gold Standard.** The IMF is in certain respects similar to the International Gold Standard. The latter secured exchange stability, the former tries to do so. Under the latter gold was the standard of value and the rates of exchange between different currencies were determined on the basis of their gold contents. The IMF requires all its member nations to declare a par value for their currencies in terms of gold (or U.S. dollars which are equivalent to gold).

During 1936-39 the Gold Standard operated in European countries in a modified form. During this period U.K., France and several other countries maintained special reserves, known as Exchange Equalisation Accounts, with which they operated in the foreign exchange market. The Accounts contained gold, foreign currencies and home currencies. These were sold and purchased in reverse of the market trends with a view to keep the exchange rate of the home currency at a steady level. An Exchange Equalisation Account was in the nature of a buffer which would absorb short term disturbing influences in the foreign exchange market (*e.g.*, a deficit in the balance of payments) and thereby provide for exchange stability. Some writers are of opinion that the IMF operates in the same way. The IMF assists countries suffering from a deficit in the current account by loans from its stock of international currencies. The deficit countries can, with such assistance, avoid temporary embarrassments and can get time to adopt measures for the solution of their problems. Coulborn¹ observes as follows: "The International Monetary Fund is essentially an amalgamation of the Exchange Equalisation Accounts of the Gold Standard Reserve days put under international control".

The IMF, however, differs materially from an international Gold Standard. The main differences are as follows:

(a) Under Gold Standard the value of the currency unit of each country depended on and varied with the value of gold. The member nations of the IMF use paper money which is not convertible into gold by the authorities.

¹ Coulborn, *Discussion on Money*.

(b) The Gold Standard secured exchange stability at the cost of internal stability. The rules of the IMF allow a country suffering from a fundamental disequilibrium to devalue a currency.

(c) Under Gold Standard foreign payments were finally settled by gold movements. The rules of the IMF do not compel a country to adopt this method. A deficit country can borrow from the IMF on the basis of its quota.

Position of Gold under the Fund. The Fund uses gold as the international unit of measurement. But the U.S. Dollar is treated as an alternative to gold. Thus the par values of currencies are to be expressed in gold *and* dollars. A part of the contributions of each member nation is to be given in gold *or* dollars. Under certain circumstances a member may be required to sell gold to the Fund or buy gold from it. The member countries are under an obligation *not* to buy or sell gold at a price different from that settled by the Fund.

The IMF, however, does not amount to a Gold Standard because the values of the currencies of the member nations do not depend on or vary with the value of gold.

9. **Is the IMF the Central Bank of Central Banks?** It has been suggested that the IMF is related to the Central Bank of the member nations in the same way as the Central Bank of each country is related to the banks in it. If this view is correct, it is possible to say that the IMF is the Central Bank of Central Banks.

The IMF is similar to a Central Bank in certain respects.

(i) A Central Bank gives loans to the member banks. The IMF gives loans to the Central Banks.

(ii) A Central Bank is the custodian of the cash reserves of the member banks. The Fund is a pool where the resources of the Central Banks are collected, at least in part.

(iii) A Central Bank secures uniformity of the credit policies of its member banks. The IMF tries to harmonise the national monetary and economic policies of the member countries.

The IMF differs from a Central Bank in the following respects :

(i) A Central Bank can create money. The IMF cannot.

(ii) A Central Bank holds the currency reserves of the country. The Fund holds only such reserves as are required for international payments.

(iii) A Central Bank *directs* the credit policies of its member banks. The IMF has no such powers over its member countries.

(iv) A Central Bank is custodian of its own national currency. The IMF is custodian of different kinds of currencies.

(v) A Central Bank has *full* control over its member banks. The IMF possesses much less powers because the member nations are independent states.

On the whole it may be concluded that it is not correct to describe the IMF as the Central Bank of Central Banks.

10. **Criticism.** It has been said that the IMF has played a very minor role in post-war international finance. A. C. L. Day² observes that, "The most ambitious, and so far, the least successful, of post-war international monetary institutions is the International Monetary Fund". When the Charter of the IMF was drawn up it was hoped that it would become a *supra-national central bank* bringing order in international monetary affairs. Keynes hoped that through it the ideal of an internationally managed money will some day be realised. The IMF has solved the balance of payments difficulties of some countries but has not been able to fulfil the high expectations of its founders.

There are certain *defects in the Articles of Agreement and in the constitution of the Fund*. The conditions of borrowing are too onerous. The official buying limits for foreign currency (25% of the quota per annum and 200% in all) are too small for ordinary currency transfers and are entirely ineffective against movements of "hot money". (See item 6 above).

The resources of the Fund are too small. The balance of payment deficit of many countries are so enormous that the Fund is unable to cope with them. Recently the IMF has doubled the capital contributions of its members. Even this may not be sufficient to deal with the problem adequately.

The management of the Fund is too complex. The presence of representatives of many countries on the Board sometimes prevents adequate discussion of the problems of a particular country.

The success of an organisation like the IMF depends upon the *co-operation of the member nations* and a willingness on their part to subordinate national interests to international good. Since 1968, the world economy has been going through certain difficulties due to Dollar Disequilibrium (adverse balance of payment for U.S.A.) and gold and liquidity shortage due to lack of means to pay the excess of import over export. The IMF found it impossible to fix the *inflexible exchange rates* according to the procedure settled by the Bretton Woods system of international payments. The main causes of the crisis are stated below.

(i) U.S.A. was faced with *unemployment* but the continental European countries had *full employment* and expanded economies and were following restrictive economic policies.

(ii) There was an excessive reliance on monetary policy of the most importing and exporting countries.

(iii) U.S.A. was pursuing low interest and easy credit policies while Europe was following high interest and tight credit policies. This

² Day, *Outline of Monetary Economics*, p. 529.

caused massive movements of sensitive short time capital from the U.S.A. to Europe.

(iv) The American current accounts surplus was much too small to cover the net outflows of private long term capital and Government expenditures abroad.

Controlled floating rates would partially achieve this purpose. (Floating Exchange Rates, p. 485).

THE INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

1. **Objectives.** The International Bank for Reconstruction and Development (called IBRD or the World Bank) was created with the following objectives.

(i) *To facilitate international investment of capital* for productive purposes in underdeveloped countries and elsewhere. At present surplus capital is found mostly in U.S.A. It is necessary to encourage the flow of American capital by providing a suitable institutional arrangement.

(ii) *To help reconstruction work* in countries damaged by war. The money required for the purpose is too large for the countries concerned and therefore international assistance is necessary.

(iii) *To develop the resources and the productive capacity* of backward or underdeveloped regions.

(iv) *To promote balanced growth of international trade* so that in the long run no country suffers from disequilibrium in the balance of payments.

Items (i) and (ii) are the immediate objectives of the World Bank. Items (iii) and (iv) are the long run objectives.

2. **Organisation.** Every member of the International Monetary Fund is also a member of the World Bank.

At the time of formation the authorised capital of the World Bank was \$10,000 million. This could be increased if three-fourths of the voting power agreed. Such increase occurred subsequently. On June 30, 1960, 68 countries were members of the Bank and the total capital subscription amounted to \$19,307,900,000. About one-third of this is from U.S.A. Each share is for \$100,000 of which 2% is payable in gold or dollars and 18% in the members' own currency. The remaining 80% constitutes a guarantee fund liable to call only when necessary.

The management of the Bank is like that of the IMF. Members have unequal voting powers. There are 17 Executive Directors. Five are appointed by the largest shareholders and the rest are elected by other members. The Chief Executive is called the President. All

the Presidents up to date have been Americans. The principal office is situated in U.S.A.

3. **Functions.** The functions performed by the World Bank follow from the objectives set out in its Articles when it was formed. They can be summed up as follows.

(i) *It grants loans for long and medium terms.* Loans may be divided into two types : Reconstruction Loans and Development Loans. The first is given to countries damaged by the last war, the second to all countries who require such loans for development purposes.

(ii) The Bank gives loans *to Governments and also to private borrowers* (to industrial concerns for particular projects). In the latter case the Bank demands a guarantee from the Government, the Central Bank and similar organisations of the region in which the project is to be undertaken. The Bank generally does not provide the entire cost of a private project. The organisers are expected to bear at least a part of the costs.

(iii) Loans are granted *after preliminary discussions* with the parties and a *critical examination* of the project. The Bank's help is given only after it is satisfied that the project is a sound one.

(iv) The Bank gives *technical advice* to the borrowers and for this purpose engages experts.

(v) The Bank promotes foreign investments by *guaranteeing loans* made by other organisations. The Bank's duty is to *supplement* and not to *supersede* the flow of private risk capital.

(vi) The World Bank's capital is too small to provide for the development needs of the entire world. It has therefore set up a number of *subsidiary organisations for further finance*.

(vii) The Bank has certain *miscellaneous functions*. It can buy and sell securities issued or guaranteed by it or in which it has invested. But it must obtain the approval of the member in whose territories the purchase or sale will take place. It can guarantee securities in which it has invested. It can buy and sell other securities if approved by three-fourths of the directors' voting power. It can borrow the currency of any member with the approval of that member. The Bank or its officials must not interfere in political matters.

Note : The Articles of the Bank require that, except in special circumstances, Bank loans must be for *specific projects* of reconstruction or development. The projects selected should be those which are *most useful and urgent for increasing the productive powers* of the borrowing country. Except in special circumstances, Bank financing should be intended *to meet foreign exchange* rather than domestic currency outlays.

4. **Activities of the World Bank.** The projects financed by the World Bank were mainly in the fields of electric power, transportation,

communications, agriculture, forestry and industry. The regional distribution of the loans was nearly as follows : Asia—31% ; Europe—27% ; North and South America—21% ; Africa—15% ; Australia—6%.

Since 1970, the World Bank is getting large profits. It is now giving *soft loans*, i.e., the rules regarding the debts are not so stringent.

5. **Subsidiary Organisations.** Two organisations allied to the World Bank have been set up, viz., The International Finance Corporation (in 1956) and the International Development Association (in 1960). The President of the World Bank is *ex-officio* President of both these organisations.

The International Finance Corporation finances private industrial projects in both developed and undeveloped countries, without requiring Government guarantee. In June, 1962, its resources amounted to \$120.7 million.

The International Development Association is an affiliate of the World Bank. Members of the World Bank can become members of the IDA. It assists the economic development of member countries by long term loans which are interest free but bear a service charge of 0.75%. The IDA raises resources by subscriptions from members. The total subscription raised originally was \$765 million. This has been substantially increased by further subscriptions later on.

6. **Criticisms.** The Bank's loan policy has been criticised on two grounds. It is said that the *insistence on specific project loans* restricts the Bank's usefulness to underdeveloped countries. The Bank does not give general assistance for development. This restriction, however, has a good effect. It prevents the wastage of resources on unsound projects. Close examination by the Bank of all proposals have been found to be very useful. It is also said that the Bank wants to exercise *too much control* over the projects financed by it. This also is good from developmental point of view. The screening of projects by the Bank will not hamper development if the screening is on economic grounds and is impartial in character.

At one time it used to be said that the Bank preferred European borrowers. This is no longer true. Up to June, 1960 the major part of the loans (31%) was given to Asiatic countries. India has borrowed from it (up to 30.6.65) 981 million dollars.

RECOMMENDED READINGS

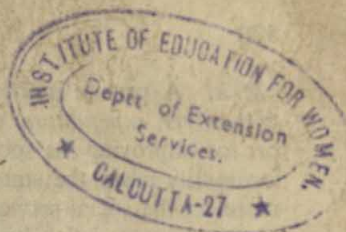
1. Halm, *Economics of Money and Banking*, Chs: 44-45.
2. S. K. Basu, *A Survey of Contemporary Banking Trends*, Part III.
3. K. Kurihara, *Monetary Theory and Public Policy*, Ch. 19.

4. Scammell, *International Monetary Policy*, Chs. 7 and 8.
5. Samuelson, *Economics* (9th edition), Ch. 36.

EXERCISES

1. Write a note on the objectives and functions of the International Monetary Fund. (C.U. B.A. '71; C.A. May '68).
2. Write short notes on the I.M.F. (C.U. B.Com. '66); International Liquidity. (C.U. B.A. '73).
3. What are the main functions of the International Bank for Reconstruction and Development? (C.U. B.Com. '61; Mysore B.Com. '67).
4. Examine the role of the IMF. Compare IMF with Gold standard. (See WAC/I June '74).

CHAPTER 37



PUBLIC FINANCE

DEFINITION

Income and Expenditure. Public Finance deals with the *income and expenditure of public authorities and how the two are adjusted*. "The study of government finance is that portion of economics which is concerned with the economic activity of governments, which are the political organizations of society". (John Due¹).

Branches. Public Finance is usually divided into four branches : Public Expenditure, Public Income, Public Debt and Financial Administration.

Scope. In former times Public Finance was regarded merely as the art of raising sufficient moneys to run the government and pay for wars. *Nowadays its scope is much enlarged*. It is believed now that Public Finance is an instrument through which certain forms of *social injustices can be avoided* (e.g., maldistribution of wealth) and through which *full employment can be secured*. The policy of the State regarding taxation and expenditure is called Fiscal Policy. Fiscal Policy is now regarded as the most important instrument of Economic policy.

DISTINCTION BETWEEN PUBLIC FINANCE AND PRIVATE FINANCE

There are certain differences between government finance and individual finance.

1. *For the private individual, income determines expenditure. For the state, expenditure determines income.* A private individual cannot, as a rule, spend more than what he earns. The state is under no such limitation. The state first decides what money is required and then sets about finding it from private individuals.

This distinction is subject to exceptions. A private individual can increase his income by harder work and will do so under the spur of necessity whenever possible. The state also sometimes balances its budget by curtailing expenditure rather than increasing income. But on the whole, the state is less concerned with deficits than the private individual. The point of view is different.

¹ J. F. Due, *Government Finance*.

2. A private individual generally tries to secure *a surplus of income over expenditure*, so that he can save something for the future or, for improving his social position. *The state has no such objective.* Ordinarily when the state has a surplus it reduces taxation or spends more on the social services. Keynes recommends that the state should always have a *deficit* budget so that it can spend more and ensure that the level of total expenditure in the community does not fall short of the level required for full employment.

3. The state can borrow money *internally* from its citizens and *also externally* from foreigners. For a private individual all loans are external. He cannot borrow from himself.

4. The state can finance itself by *creating money*. The private individual cannot.

5. A private individual values present income (and wealth) more highly than future income (and wealth). *He discounts the future at a fairly high rate.* But the state is concerned with the present generation as well as future generations and should spend liberally for development work. As Dalton puts it, the State should discount the future at a low rate.

6. A private individual distributes his expenditure in such a way as to get equal marginal utility from each line of expenditure. By following the *law of equimarginal returns* he maximises his welfare. The same principle applies to the State with the qualification that the State's objective is public welfare in the present as also in the future.

7. *A private individual can become bankrupt but not the Government.* The concept of bankruptcy cannot be applied in the case of the Government. The liabilities of the Government can be ascertained, not the assets. The assets are at least equal to the sum of the assets of its citizens.

PUBLIC EXPENDITURE

Definition. The term Public Expenditure is used to denote the *expenditure incurred by the Government*. It includes the expenditure of all branches of the Government.

Classification of Public Expenditure. Public expenditure can be classified in many ways.

It is possible to differentiate public expenditure according to the authority which spends the money, *viz.*, (a) Federal or Union or Central expenditure (b) State or Provincial expenditure and (c) Local expenditure or expenditure of municipalities and other local bodies.

Public Expenditure can be classified according to the object of the expenditure. Economists have suggested the three classes as stated below :

1. *Productive or Service-Rendering Activities.* These utilize resources in the rendering of services to the community, e.g., electric power, postal service etc.

2. *Transfer Activities.* Some governmental activities merely transfer purchasing power from some persons to others. For examples :

- (a) Welfare activities. Family allowances, old-age pensions, etc.
- (b) Subsidies. Payments are made by Governments primarily for the purpose of inducing the recipients to alter their economic activity in some fashion. e.g., protection of home goods.
- (c) Interest payments on the national debt.

3. *Stabilization Policies.* These are fiscal measures designed to control unemployment and inflation.

Musgrave² suggests that public expenditures should be listed upon the differences in the motives for undertaking the activity.

The Causes of the Real Increase in Government Expenditures. Governments spend more money today in real terms and also in money terms. They perform more functions and carry them on at higher levels. It is found that total Government expenditure rises along with increase of GNP. The causes of increasing expenditure are stated below :

- 1. National Defence.
- 2. Welfare programmes.
- 3. Better standard of performance by the Government.
- 4. Development Planning.
- 5. Anti-unemployment.
- 6. Fiscal Measure (anti-business cycles etc.).
- 7. Public Works.
- 8. Increase of population.
- 9. Rising of Price Level.

Effect of Public Expenditure on Production. According to Dalton, the effect of public expenditure on production may be analysed under three heads :

1. *Ability to work and save*—Ability to work is increased by all expenditure which increases efficiency, e.g., expenditure on education, public health etc. Ability to save is also increased by public expenditure because it results in increased income on the part of the recipients of the expenditure.

2. *Desire to work and save*—In most modern states, grants are made to the working classes in the form of old age pensions, unemployment relief, etc. Dalton is of opinion that the expenditure of these grants will cause a slight diminution of the desire to work and save.

3. *Diversion of economic resources*—The state can encourage the

² J. F. Due, *Government Finance* and Musgrave, *A Theory of Public Finance*.

development of particular industries by grants of bounties and subsidies or by itself running a public enterprise. Such activities on the part of the state can be justified if it results in an overall increase of production and productive efficiency.

Conclusion. Public expenditure can be made to produce a wholesome effect on production. Judiciously planned it can increase both the ability and desire to work and save, and can cause diversion of resources to uses which increase social welfare. (See, Fiscal Policy, p. 543).

Effect of Public Expenditure on Distribution. Public expenditure may be so arranged that it *reduces the inequality of incomes*. (See p. 264). Expenditure on old-age pensions, unemployment relief, free education or the provision of free roads, bridges etc., benefit the poorer classes of the community at the expense of the rich. According to Dalton such expenditure should be made progressive, *i.e.*, it should be so arranged that the poorer a person is the more benefit he receives from the state. If this process, however, is carried to excess two difficulties may arise—(i) it may check the ability and the desire to save on the part of the rich and thereby affect production (ii) it may lead to increased idleness on the part of the poor and thus check the desire to work and save.

The Employment Effect of Public Expenditure. Public expenditure can increase employment. According to Keynes, public expenditure can be utilised to make up deficiencies in private spending and private investment. If total spending in the community becomes small, unemployment and depressions occur. It is the duty of the State to rectify the deficiency by increasing public expenditure. The employment-effect of public expenditure is the most important factor determining the fiscal policy of the government.

Principles which should guide Public Expenditure. Public expenditure properly guided can do immense good to society, *e.g.*, reduce inequalities of income, mitigate cyclical fluctuations and move the economy towards full employment. Therefore, *public expenditure is not an evil but is an important part of economic policy*. Certain general principles may be laid down regarding public expenditure. They are as follows :

1. **Economic Development :** In an under-developed country the Government should undertake projects which would bring about economic development. Such projects are generally not undertaken by private individuals either because they are too costly or because they do not yield immediate monetary returns. The Government should take a long period view of the country's requirements and spend money accordingly. A statesman, "is a trustee for the future no less than for the

present." Most countries recognise these principles and organise their development projects through Economic Plans.

2. *Functional Finance* : Public expenditure is justified for the purpose of creating *employment opportunities* during depressions. In times of boom a reduction of public expenditure has a favourable effect. Variation of public expenditure is an important part of what is known as the contra-cyclical fiscal policy of functional finance. Public expenditure is also justified for the purpose of *increasing effective demand* and thereby moving the economy towards full employment (See pp. 543-5).

3. *The Principle of Maximum Social Advantage* : The operations of public finance involve a series of transfers of purchasing power from one set of individuals to others. The Government collects money from tax-payers and purchasers of Government bonds and pays out the money to its employees and the people who sell materials to it. *These transfers may be so organised and arranged as to increase total production and improve distribution*, both of which will improve public welfare. (Examples—subsidies to deserving industries; public works to create employment; expenditure on education, medical assistance, unemployment relief, old age pensions etc. which reduce inequalities of income.) But the money required for public expenditure comes from the public. If the rates of taxation are too high there will be unfavourable effects on incentives and production may be affected. The Government must *compare the addition to welfare obtained by spending a particular sum of money with the social and economic cost of raising it*. The Government's fiscal policy should be so arranged as to secure the greatest possible *net advantage*, i.e., it should maximise the difference between the addition to welfare obtained by its expenditure and the social cost involved in obtaining the money. This principle has been called by Dalton the *Principle of Maximum Social Advantage*. It is an admirable guide to policy although there are great difficulties in applying it in practice. The variables involved, social advantage and social cost, are hard to calculate in money terms.

4. *Economy* : The three principles laid down above justify various types of Government expenditure but they do not tell us how much expenditure is proper. On this point the current view is that it is not the *amount* of money which is spent but the *purpose* for which it is spent which determines the adequacy of Government expenditure. But it must be recognised that *too much expenditure may lead to inflation*. There may also be unfavourable effects on production if the rates of taxation are too high. So the Government should *avoid reckless expenditure*. It should also *avoid wasteful expenditure*, i.e., expenditure which causes an uneconomic use of resources. Economy in Government expenditure is attempted to be secured by two ways :
(i) The amounts to be spent for particular purposes are laid down in

the budget and Government servants are not allowed to spend in excess of the sanctioned amounts. (ii) After the budget grants are spent, the accounts are scrutinised by the Public Accounts Committee of the Parliament. These methods are useful but they have not succeeded in eliminating either irregularity or extravagance from Government expenditure.

5. *Avoidance of injurious effects* : Government expenditure must be so arranged as to avoid producing injurious effects on production and distribution. Government expenditure should also be solely in the public interest and not for the private interests of any group of persons.

Methods of Financing Public Expenditure. There are three main methods of financing public expenditure : (i) taxation (ii) borrowing (iii) creation of money, and (iv) miscellaneous methods of less importance, viz., sale of land and property belonging to the Government ; gifts from its citizens or foreign institutions and Governments (this item may be important in underdeveloped countries receiving aid from developed countries) ; tributes and indemnities etc.

The major part of the ordinary expenditure of the Government (civil administration, maintenance of law and order etc.) is usually financed by *taxation*. This is considered to be a satisfactory method because taxes have no inflationary effects. Expenditure on economic development or for war and other emergencies cannot be fully met from taxation. The money required for such purposes is too large. The tax system cannot be expanded to meet such expenses. Also excessive taxation checks production and dries up the sources of capital. Therefore for all extraordinary expenditure, alternative methods must be adopted.

A Government can finance expenditure by *borrowing*. But this should not be done for the ordinary expenditure of the Government. Borrowing is justified for financing development projects and for emergency expenditure. Economic development plans are financed to a large extent by borrowing.

A Government is sometimes forced to finance expenditure by *creating money*. According to orthodox views, this is a very unsatisfactory method because it leads to inflation. According to Keynes, finance by created money or deficit financing is justified as an anti-depression measure and for achieving full employment. In underdeveloped countries, deficit financing is used in economic planning to a certain extent (e.g., in India).

In many countries, the Government gets a large income from *nationalised enterprises*. In countries like India it is of less importance than taxation.

Public expenditure involves the use of resources from the net national product of the country. The different methods of financing public expenditure are methods of *transferring resources* from private to public hands.

PUBLIC REVENUES

Definition. The term Public Revenue includes *all receipts obtained by the State*. Public revenue may be classified under two heads, Tax-revenue and Non-Tax revenue.

Tax-revenue. Tax-revenue includes all revenues obtained from "taxation". Taxes are compulsory contributions, for common purposes. No tax payer can claim any special service for paying a tax. "The essence of a tax as distinguished from other charges by the government", says Taussig,³ "is, the absence of any direct *quid pro quo*, between the tax payer and the public authority". Chief examples of taxes are, income tax, customs duties, sales tax and excise duties.

Non-tax revenue. Non-tax revenues include all other receipts of the state. Non-tax receipts can be classified as follows.

1. *Receipts from public property*: The Government receives revenue from land and buildings owned by it, e.g., land revenue obtained from Khas Mahal lands in India.

2. *Receipts from public enterprises*: The Government receives profits from public enterprises like, railways, post offices, the central bank etc. State enterprises are generally monopolies. If in such cases the state charges a price higher than what the price would be under competition, the excess charge is a compulsory contribution and should properly be classed under taxes.

3. *Fees*: A fee is a charge made by the state for a service which is for the general good but which also confers a special benefit to a particular individual, e.g., registration fees for legal documents, gun licence fees etc.

4. *Fines and Penalties*: Court of law can impose fines for various offences. Executive departments of the Government can, under certain circumstances, impose penalties for breach of regulations. The fines and penalties are part of the public revenues.

5. *Special Assessments*: A special assessment is a compulsory contribution levied in proportion to the special benefit derived from improvements of property brought about by state-action or social progress. Unearned increments from land and betterment of building sites are usually subjected to special assessment.

6. *Public Borrowing*: The proceeds of loans floated by the Government may be included within public revenues.

³ Taussig, *Principles of Economics*.

7. *Receipts from the use of the Printing Press* : Finance obtained by printing paper money is a type of non-tax revenue. Inflation is a source of income to the Government. The issue of token coins also yields a profit to the Government.

8. *Extraordinary Revenue* : The Government may get revenues from various extraordinary sources, e.g., tributes and indemnities, forced loans, gifts, conscience-money (payment of suppressed taxes), aid for development, foreign assistance (like those obtained by European states under Lend-lease or E.R.P.) etc.

Comments. There is no clear cut boundary line between tax-revenue and non-tax revenue. A 'fine' is a non-tax revenue but sometimes fines are imposed with the object of raising revenues. In such cases the fines ought to be included within tax-revenues. Inflation, since it compulsorily transfers purchasing power from private individuals to the State, may be included within tax-revenues.

Proportion between Public Revenues and the Gross National Product. Government spending has risen faster than GNP. Taxes, as percentages of gross national product, in 1973 were as follows : Sweden—43% ; West Germany—35% ; United Kingdom—35% ; United States—32% ; Japan—21% ; India—15%. Colin Clark⁴ says that every Government should get 25% of GNP for development and as a guarantee against crises.

DIRECT TAXES AND INDIRECT TAXES

Impact and Incidence. The person from whom a tax is collected is said to bear its Impact. The persons who ultimately pay the money are said to bear its Incidence. Transfer of the burden of a tax, from one person to another, is called Shifting.

Direct Tax. A Direct Tax is one whose impact and incidence are on the same person. The income tax is generally considered to be a direct tax because the person, from whom it is collected, has to bear its burden. He cannot shift the burden to anybody else.

Indirect Tax. An Indirect Tax is one whose impact and incidence are on different persons. The sales tax is an indirect tax because it is collected from sellers but the sellers do not pay it from their own pockets. They add the tax to the sale price and get the money from the buyers.

Distinction. That direct taxes are those which are levied upon citizens, e.g., income tax and indirect taxes are those which are levied on goods and services, e.g., excise tax, customs tax etc.

The distinction between direct taxes and indirect taxes, which is based on incidence of taxation, sometimes becomes vague. The in-

⁴ Colin Clark, *Conditions of Economic Progress*.

come tax is recognised as a direct tax but a part of the burden of the income tax can sometimes be shifted to others. An import duty is recognised as an indirect tax but the tax affects the importer's income because it raises prices and reduces sales.

Merits of Direct Taxes. A direct tax has the following advantages :

1. Direct taxes can be made *progressive*. The rate of tax can be made to increase with the paying ability of the tax-payer. This is in accord with equitable principles.

2. Through direct taxes, *inequality of incomes and wealth can be reduced*.

3. The money-burden of direct taxes is *known beforehand*, being laid down in statutes. The money burden of an indirect tax varies because it depends on the amount of purchases.

4. Direct taxes are *economical*. The cost of collection is usually low.

5. Some direct taxes, like the income tax and death duties, are highly *productive*.

6. They are also highly *elastic*, i.e., capable of quick increase and decrease.

7. The burden of direct taxes is *clearly* felt and the payers take interest in how the money is spent. Thus civic consciousness is increased.

Demerits of Direct Taxes. Direct taxes have the following disadvantages :

1. Direct taxes, like the income tax, *involve enquiries* into the private affairs of citizens.

2. Direct taxes are payable in lump sums and are therefore *inconvenient and unpopular*.

3. Direct taxes tempt preparation of false accounts and other forms of *evasion*.

4. The graduation of direct taxes is *arbitrary*.

5. The high rates charged on high incomes may *check industry and enterprise*.

Merits of Indirect Taxes. Indirect taxes have the following advantages :

1. Some indirect taxes are highly *productive*, e.g., the sales tax.

2. They are paid by all classes of people. Poor people can escape direct taxes but not the indirect ones imposed on consumption goods. Indirect taxes therefore make the tax system *broad-based*.

3. They are *convenient* because payment is made in small amounts when goods are actually purchased.

4. Some indirect taxes are highly *elastic*, viz., those imposed on goods with inelastic demand.

5. Indirect taxes can be made *instruments of social reform*. Taxes on drugs and intoxicants restrict their consumption.

Demerits of Indirect Taxes. Indirect taxes have the following disadvantages :

1. Indirect taxes cannot be related to the income of the taxpayer. They are more burdensome to the poor and are *regressive in character*.

2. *The cost of collection is often high.*

3. *The yield, except those of taxes on necessities with inelastic demand, is often low.*

Conclusion. The revenue requirements of modern states are so large that both forms of taxation must be used. On grounds of equity and ability to pay, more reliance should be placed on direct taxes.

Indirect taxes are justified for the purpose of raising revenues and for reducing the consumption of harmful articles.

THE RATES OF TAXATION

Classification. Taxes may be classified into three groups according to how the rate of taxation varies.

1. *A Proportional Tax* is one which charges all incomes at the same *flat rate*. For example a tax of 2% on *all* incomes is a proportional tax.

2. *A Progressive Tax* is one which increases with the increase of income. In all modern income tax systems the *rate of tax* or the percentage of the income payable, increases as the income increases, e.g., personal income taxes, death and gift taxes.

3. *A Regressive Tax* is one which falls more heavily on smaller incomes. Taxes on necessities are regressive in character, e.g., excise taxes, custom duties etc.

"Progressive" means that the *rates* of tax are progressively higher. It does not imply that such taxes are good or that such people are more "advanced".

Proportional v. Progressive Taxation. A proportional tax is easy to calculate and simple to apply but is inequitable. As income increases, the ability to pay increases more than in proportion. 5% out of a small income is much more burdensome than 5% out of a large income.

The earlier writers were in favour of proportional taxation. Thus according to McCulloch, "when you abandon the plain principle (of proportion) you are at sea without rudder and compass and there is no amount of injustice and folly you may not commit". According to John Stuart Mill, "A graduated income tax is an entirely unjust mode of taxation, and, in fact, a graduated robbery". Modern writers, however, are almost unanimously in favour of progressive taxation.

The following arguments can be used in support of progressive taxation :

1. It is *equitable* because it is in accord with the *principle of ability*. A rich man is more able to pay than a poor man. As a rule the greater the income the greater is the ability to pay.

2. Pigou justifies progressive taxation on the ground that it secures the *least aggregate sacrifice* for the community as a whole. When a poor man pays money, the sacrifice is comparatively large because he may have to give up the purchase of some necessary article. When a rich man pays, the sacrifice is less because he has to give up less urgent wants. Sometimes it involves practically no sacrifice, for example when the tax is paid out of hoarded money or savings. If the public revenues are collected equally from the rich and the poor, the total sacrifice will be larger than what it would be if the greater part of it is raised from the rich. Therefore progressive taxation involves the least aggregate sacrifice.

3. Hobson points out that *high incomes contain a large part of unearned incomes*, e.g., rent, monopoly profits, money earned by exploitation etc. Therefore high incomes should be charged at higher rates than low incomes.

4. Under a system of progressive taxation, the rich people pay more than the poor. Therefore, it *reduces inequality of incomes and wealth* and is socially beneficial.

5. *Progressive taxation increases the community's propensity to consume*. The higher income groups have a low propensity to consume. A poor man has to spend 100% of his income on his urgent needs but a rich man rarely finds it necessary to spend more than a fraction of his income. Therefore he saves a large part of his income. There is a danger that such savings may accumulate in idle hoards. To prevent the possibility, such savings should be taken away by the state through progressive taxation and utilised in promoting investments which will increase employment.

The following arguments can be used against progressive taxation :

1. There is an element of *arbitrariness in the fixation of the rates of progression*. There is no simple rule according to which the rates are to increase.

2. Progressive taxation reduces the desire to save and may therefore retard capital formation.

3. Progressive taxation lowers profits and therefore *reduces the incentives to enterprise*.

4. If the rates of taxation are too high there arises a tendency to falsify account books and *adopt unfair practices* to evade taxation.

Conclusion. The arguments advanced against progressive taxation are applicable to all forms of high taxation and not against the

principle of progression as such. High taxation always produces a desire towards evasion and always has a disincentive effect on savings and enterprise. Such arguments do not vitiate the idea behind progressive taxation, viz., if a certain sum of money is to be raised by taxation, it is better to raise it as far as possible from the higher income groups. Against the principle so stated there is practically no opposition in modern times.

When considering the effects of taxation, it is necessary to take into account the tax-system as a whole. Equity and expediency will be satisfied *if the tax system as a whole is progressive*. It is not necessary that each particular tax should be progressive. There are certain taxes which are bound to be regressive, e.g., taxes on commodities in general use. The harmful effects of such taxes may be cancelled by a high rate of progression in other taxes, e.g., taxes on income and inheritance.

INCIDENCE OF TAXATION

Definition. The person who really pays a tax is said to bear its "incidence". Sometimes the money burden of a tax is shared by a number of persons. The subject, Incidence of Taxation, involves an enquiry into the question, who bears the money burden of a tax, and, how the burden is shared.

Burden of tax. The person from whom a tax is collected does not always bear the whole burden of the tax. When a tax is imposed on a commodity or service, the producer adds the tax to his cost and raises the price. If the price can be raised by the full amount of the tax the whole burden falls on the consumer. If the commodity or service is of such a nature, or if it is somehow arranged, that the price is not raised at all, the whole burden falls on the producer. Usually, the situation lies *between the two extremes*. The price is raised partially, sales are reduced and the producer earns less profit than before. *So the burden is shared between the producer and the consumer.*

The incidence of a tax depends upon (i) the nature of the tax and (ii) the conditions of demand and supply of the commodity or service on which the tax is imposed (iii) size of tax and (iv) presence of substitutes. The incidence of different types of taxation is discussed below.

1. **Incidence of a Tax on a Commodity produced under Competitive Conditions.** (Excise Duties, Customs Duties, etc.). In this case the general rule is that the *money burden of the tax is shared between the producer and the consumer in proportion to the elasticity of demand and the elasticity of supply.*

When a tax is imposed on a commodity, the seller adds the tax to his cost and attempts to raise the price by the full amount of the

tax. But higher price reduces the sales. The greater the elasticity of demand, the greater is the fall of sales. Smaller sales and reduction of output change the cost conditions, the extent of which is measured by the elasticity of supply. The final result of the tax is to make total sales lower and the price higher (but not by the whole amount of the tax).

If the demand is fairly inelastic, consumers will not be able to reduce purchases much and will have to bear the greater part of the burden. If the demand is elastic, the price cannot be raised much because demand will fall off quickly; hence the sellers will have to bear the greater part of the burden. The same conditions, in reverse, apply to the elasticity of supply. If the supply of a commodity is highly elastic, the greater part of the burden will fall on the consumers. If the supply is inelastic, the greater part of the burden will fall on the sellers. Thus the elasticity of demand and the elasticity of supply of the commodity determine how the burden of the tax is shared between the producer and the consumer. A mathematical proof of the proposition is given below.

Let DD_1 and SS_1 be the Demand and Supply Curve of a commodity. If a tax amounting to QT per unit is imposed on the seller, the cost of production goes up by QT per unit. Therefore the Supply Curve is shifted up to a new position like SS_2 . Prior to the imposition of the duty, PM was the price sold. After imposition of the duty, QN

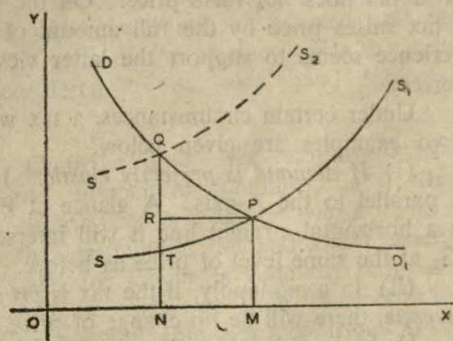


FIG. 77

is the price and ON is the amount sold. Hence price rises by QR ($=QN-PM$) and sales fall by PR ($=OM-ON$). Out of the total tax ($=QT$) consumers bear QR . Therefore, the producers bear RT . The ratio between RT and QR is determined as follows.

$$\text{Elasticity of Demand} = \frac{MN}{OM} \div \frac{QR}{PM} = \frac{MN}{OM} \times \frac{PM}{QR}$$

$$\text{and, Elasticity of Supply} = \frac{MN}{OM} \div \frac{RT}{PM} = \frac{MN}{OM} \times \frac{PM}{RT}$$

$$\therefore \frac{\text{Elasticity of Demand}}{\text{Elasticity of Supply}} = \left(\frac{MN}{OM} \times \frac{PM}{QR} \right) \div \left(\frac{MN}{OM} \times \frac{PM}{RT} \right)$$

$$\frac{MN}{OM} \times \frac{PM}{QR} \times \frac{OM}{MN} \times \frac{RT}{PM}$$

$$= \frac{RT}{QR} = \frac{\text{seller's share of the burden}}{\text{buyer's share of the burden}}$$

The distribution of the burden of taxation among producers and consumers takes place *through changes in prices and output*. But such changes require time. Therefore, the full effects come only in the long run. In the short run, prices will probably rise to the full extent of the tax and the consumers will bear the whole burden.

In the long run certain other effects may also appear. Since prices of all commodities are more or less inter-dependent, industries other than the one taxed will be affected. For example, suppliers of materials to the manufacturers of the taxed commodity may be forced to accept lower prices. Under such circumstances they also bear a part of the burden.

Can a Tax leave prices Unchanged? One sometimes hears arguments like the following: The first effect of a tax is to raise the price; but higher price reduces demand and price falls back again. So a tax does not raise price. On the other hand others argue that a tax raises price by the full amount of the tax. Recent Indian experience seems to support the latter view. But neither view is fully correct.

Under certain circumstances, a tax will leave the price unchanged. Two examples are given below.

(i) *If demand is perfectly elastic.* In this case the demand curve is parallel to the X-axis. A glance at Fig. 77 will show that if DD_1 is a horizontal straight line it will intersect the after-tax supply curve SS_2 at the same level of price as before.

(ii) In a monopoly, if the tax is *proportional to the net monopoly revenue*, there will be no change of price. (See below).

Under certain circumstances a tax will raise price by the full amount of the tax, e.g., if demand is perfectly inelastic. In this case the demand curve is perpendicular to the X-axis. It will intersect the after-tax supply curve at a point which is higher than the previous point of intersection by the full amount of the tax.

The examples given above are rarely met with. In most cases a tax raises price but not by the full amount of the tax.

2. A Tax on a Monopoly. The incidence of a tax on a monopoly depends on the nature of the tax.

(i) Suppose that the tax is proportional to the output of the monopolist. In this case the marginal cost curve of the monopolist is shifted upwards. The demand curve remaining unchanged, the after-tax point of intersection between the marginal cost curve and

the marginal revenue curve will be a higher level. (See Fig. 47 on page 201). So the price will rise, but not by the full amount of the tax. How much higher the new price will be, depends on the elasticity of demand and the elasticity of supply of the commodity. In this case the incidence is just like that of a commodity under competition.

(ii) If the tax is proportional to the net monopoly revenue, the price will not change. Such a tax will not affect either the marginal revenue curve or the marginal cost curve. Hence the monopoly output, which is fixed at the point of intersection of the marginal revenue curve and the marginal cost curve, will remain unchanged. Therefore price will not change.

(iii) A tax so arranged that its rate diminishes as output increases, will raise the marginal cost curve but the slope of the new marginal cost curve will be less than that of the pre-tax marginal cost curve. The new marginal cost curve may intersect the marginal revenue curve at a higher output level. If it does so, the price will fall.

3. Tax on Unearned Increments. (Taxes on rent, betterment fees, etc.). Such taxes fall entirely on the owner. Rent is not a part of the cost of production. (See Ch. 22). A tax on rent will not shift the supply curve of the commodity upwards. By such a tax the equilibrium of demand and supply will not be affected and hence there will be no change in the price of the product. For this reason, unearned increments are considered to be very good subjects of taxation.

4. Social Insurance Contributions. The employer's contribution, since it varies with the number of labourers, is a *tax on employment*. The worker's contribution is a *tax on wages*. The incidence of both depends on the elasticity of demand and elasticity of supply of labour. The demand for labour is generally more elastic than the supply. Hence the greater part of both the contribution come from labour. According to Pigou, employer's contribution comes out of wages because the marginal net product of labour (which determines wages) is reduced by the contribution.

5. The Income Tax. If the income tax is general, i.e., applicable to all occupations, it cannot be shifted by diversion of resources from one occupation to another. Therefore a general income tax is equivalent to a tax on all commodities and services. In the long run, however, the income tax may check the incentives to work and invest and thereby reduce total employment and income. In such cases the burden falls on the whole community. The rates of income tax are important. If they are comparatively low, no bad effects are likely. In the rates are high, injurious effects on production and savings are likely.

6. **The Sales Tax.** The sales tax covers widely different types of commodities. The incidence in each particular case depends on the elasticities of demand and supply of the commodity concerned. From the standpoint of the community, the sales tax is a tax on expenditure. Private expenditure is bound to fall as a result of the tax. If the reduction is made up by equivalent government expenditure there is no effect on employment and incomes. According to Pigou, the sales tax has no injurious effects on savings.

CAPITALISATION OR AMORTISATION OF TAXES

A tax on an income-yielding asset reduces the income and automatically lowers the value of the asset. Subsequent purchasers of the asset having got it at a lower value, do not feel the tax. They get the same yield from this investment as they would have got from any other (untaxed investment). What has happened is that the owners of the asset (at the time when the tax was imposed) suffered a capital depreciation and had to bear the whole burden of the tax. This principle is known as capitalisation or amortisation of a tax. If the tax is withdrawn, the present owners will enjoy an unearned capital-increment, later owners none.

Two conditions must be fulfilled before amortisation can occur. (i) The tax must be on a durable property and (ii) the tax must be a differential tax on some type of assets only. If all assets are equally taxed there will be no alternative field for investment and therefore no differential fall in value.

THEORIES OF TAXATION

Theories of taxation deal with the question how the *burden of taxation* should be *equitably distributed* among the citizens. The term "burden of taxation" may be used in four different senses.

(i) The "direct money burden". This is equal to the total sum of money paid by the citizens.

(ii) The "direct real burden". This is measured by the sacrifice involved in paying the money. The concept of real burden is important because for the same money burden, the poor man's real burden is larger than the rich man's.

(iii) The "indirect money burden". This includes all incidental money losses caused by the tax, e.g., loss of interest when a tax is collected before sales.

(iv) The "indirect real burden". This is measured by the sacrifice of economic welfare caused by decreased consumption of the commodity or service taxed.

Theories regarding distribution of the burden of taxation: A number of theories have been formulated regarding the best method of distributing the burden of taxation. They are discussed below.

1. **The Principle of Minimum Sacrifice.** According to this theory the tax system should be so organised as to cause the *smallest possible real burden* (that is, the smallest possible sacrifice) to the community. Edgeworth was the chief exponent of this theory. Unfortunately the theory is of little practical value. "Sacrifice" is a subjective matter and cannot be measured. It is almost impossible to evaluate the real burden of a tax system. All that we can conclude from the theory is that high incomes and windfall gains are proper subjects of taxation because payment out of such incomes involves less sacrifice.

2. **The Cost of Service Theory.** According to this theory the people should pay to the public authorities the cost of production of the services given. This principle can be applied in certain cases, e.g., postal services, electricity etc., but not in others. Services like maintenance of law and order or defence are provided to all members of the community and cannot be specifically charged for from particular individuals. A suggested alternative of this principle, viz., "Value of Service" is equally indefinite.

3. **The Benefit Theory.** According to this theory people should pay taxes in proportion to the benefits enjoyed by them as citizens. This theory is vague, indefinite and impracticable. The major part of government expenditure is for the common benefit of all. It is impossible to measure how much of the common benefit a particular individual enjoys. Generally speaking government expenditure confers more benefit on the poor than on the rich. Poor people enjoy many free services e.g., medical treatment in hospitals. They also get social insurance payments. But it would be highly inequitable to raise the major part of government revenues from the poor. It would also be impossible.

The benefit theory can be applied equitably to those non-tax sources of revenue which are collected for providing a definitely measurable benefit. Fees and special assessment fall in this category. But fees are generally based on the cost of providing it and special assessments are generally graduated according to the value of the improvement. So the benefit theory is not really applied in any case.

4. **The Ability or Faculty Theory.** According to this theory people should pay taxes in proportion to their ability. Economic ability is different for different persons. People of different ability should not be treated equally for taxation purposes. "Equality for equals, inequality for unequals."

The ability principle was laid down by Adam Smith as one of his canons of taxation. If people pay taxes in proportion to their ability,

the total sacrifice or real burden is reduced to the minimum possible. The principle is therefore, just and equitable.

The main obstacle to the use of the ability principle in taxation is that it is very difficult to measure ability. There are three possible criteria for measuring ability, viz., expenditure, property, and income. None of them is satisfactory.

(1) *Expenditure* : The amount of money spent by a person, i.e., his expenditure, gives an approximate idea of his ability, because no man spends unless he is able to. But expenditure is not a good index of ability. A poor man may spend relatively more because he has more dependants or more sickness in his family, while a rich man may spend relatively less because he has no dependants or because he is miserly. Dr. Kaldor is of opinion that expenditure should be the basis of taxation because the expenditure of a man shows how much he is taking out, from the stock of goods and services in the community, for his personal consumption. This argument ignores the fact that expenditure is not always voluntary. A man should not be taxed at a higher rate because he has more sickness in the family and therefore has to spend more.

(2) *Property*. Property is apparently a good test of ability because the larger the value of a man's property the larger is his spending capacity. But it is not really a good index of ability because all properties do not yield a money income (e.g., jewellery). Professional men with the little property may earn high incomes and be able to pay more by way of taxation.

(3) *Income*. The remaining test, income, is nowadays accepted as the best criterion of ability. In this case also there are certain difficulties.

(a) The marginal utility of money is different for different persons.

(b) People with the same income may have different obligations, e.g., more dependants.

(c) All incomes do not involve the same sacrifice. Rs. 500 earned by hard work in a factory should not be placed in the same category, for taxation purposes, as Rs. 500 earned by letting out a house. Income, from property involves less sacrifice than income from work.

Conclusion. Most modern States accept the ability theory as the guide to taxation. The three conflicting criteria for measuring ability are adjusted by accepting all three as bases of taxation. Income is generally taken as the main base. But property is also taxed (e.g., through Inheritance Taxes, Local Rates, wealth Tax, etc.). Expenditure is taxed, sometimes directly (as in the former Expenditure Tax of India) or indirectly by the Sales Tax etc.

The ability principle gives us one conclusion of major importance. It is that taxes should be progressive whenever possible. A proportional tax treats unequal persons equally. Therefore, such taxation is more burdensome to the poor. The ability of a person increases more than in proportion to his income. Therefore tax rates should be progressive.

CANONS OF TAXATION: RULES OF TAXATION

Canons of taxation are rules laid down by economists and public men for the guidance of taxing authorities. Adam Smith was the first celebrated economist who did so and his canons (which are explained below) have become famous for their simplicity and reasonableness.

1. **The Canon of Ability or Canon of Equality.** "The subjects of every state ought to contribute towards the support of the government as nearly as possible in proportion to their respective abilities, *i.e.*, in proportion to the revenue which they respectively enjoy under the protection of the state". If every person pays according to his ability, there is *equality of sacrifice*: the real burden on individual tax payers is more or less equal and *the total burden is least*. The principle of ability is accepted in modern times as just and equitable with this qualification that equality of sacrifice is not secured by taxes proportional to income but by progressive taxation.

2. **The Canon of Certainty.** "The tax which every individual is bound to pay ought to be certain and not arbitrary. The time of payment, the quantity to be paid ought all to be clear and plain to the contributor and to every other person." Adam Smith considers certainty more important than equality. If the amount of tax or the time of payment is left to the whim of the tax-gatherer the tax payers would be put to a lot of trouble and corruption and bribery will follow. Also the government will find it impossible to draw up accurate budgets.

3. **The Canon of Convenience.** "Every tax ought to be levied at the time or in the manner in which it is most likely to be convenient for the contributor to pay it." The state has many sources of income. The particular time when it gets payment from an individual is not very material to it but is very important to the tax payer. The principle of convenience is a natural sequence to the principle of certainty. It may, however, be said that tax-payments are always inconvenient. What the canon really means is that the time of payment should be so fixed as to cause *the least inconvenience*. For example, a tax payable by an agriculturist should be collected *after* the reaping season and not *before* it.

4. **The Canon of Economy.** "Every tax ought to be so contrived as both to take out and to keep out of the pockets of the people

as little as possible over and above what it brings into the public treasury of the State." This canon lays down that the *cost of collecting a tax should be small in proportion to the yield*. The cost of a tax should not be interpreted in the narrow sense of administrative expenses only. If a tax has a bad effect on production or distribution it must be considered costly from the standpoint of the economy as a whole. On the other hand, if a tax has a good effect on the national economy, it is justified even though its yield is small and the administrative expenses are high.

The canons of Adam Smith are held in high respect by modern economists. But certain other canons have been recently added.

1. **The Canon of Productivity.** The net yield of a tax should be considered before imposing it except in the cases of taxes which are not imposed for revenue, *e.g.*, protective import duties. Also the tax system as a whole should produce sufficient revenues for the state.

2. **The Canon of Elasticity.** The tax system should be so organised that the total revenue can be quickly increased or decreased according to requirement.

Criticism. The canons of Adam Smith have been criticised for the following grounds.

1. It is not possible to make a particular tax to satisfy all the canons but it is usually sufficient if the tax system as a whole conforms to them.

2. Excepting Adam Smith's first canon, all the other canons are administrative in character.

3. The canons of taxation belonging to old fashioned finance. Samuelson says that "a good tax is one that produces the same revenues in good times as in bad."

4. For a long-run fiscal policy, the canons of Adam Smith have to be ignored.

THE EFFECTS OF TAXATION

Production. The effects of taxation on production have been analysed by Dalton under three heads, as stated below.

I. *Effects on the ability to work and save :*

A person's ability to work is reduced by any tax which compels him to reduce his expenditure on necessities, *e.g.*, a tax on wages or on food. Ability to save is affected by all taxes except those which fall upon persons who are so poor that they have no margin from which to save. The income tax usually exempts from taxation incomes below a certain level. Above this level the tax is usually steeply graduated. The exemption limit is generally determined with reference to the standard of living of the working class and the lower

middle class. The poorer people are therefore not taxed and this tax therefore does not affect the standard of living and does not affect the ability to work and save. The same considerations apply to inheritance taxes.

II. *Effects on the desire to work and save :*

Some taxes have no effect on the desire to work and save. For example, taxes on unearned incomes or on windfall gains fall upon unexpected incomes and do not affect the recipient's ability or desire to work and save. As regards the income tax, many economists are of opinion that if the rates are high the desire to work and save is reduced. The inheritance tax is not paid during the lifetime of the property owner. So his desire to work and save is less affected than in the case of the income tax.

A tax which is expected to be temporary has very little effect on the desire to work and save.

The effects of taxation on a person's desire to work and save depends on his *Elasticity of Demand for Income*. If this is *low*, he will put forth more work and effort to make up the loss of disposable income caused by taxation. This will happen in the case of needy persons and in the case of persons who are saving with the object of getting a definite income at a future date. In the case of persons who are already in a good financial position, the elasticity of demand for income is *high* and so the effect of high taxation will be to *reduce* the desire to work and save.

III. *Effects on the distribution of economic resources :*

If a particular type of industry is more heavily taxed than others there will be a diversion of capital from this industry to others because industries which are less heavily taxed will yield more profit to the capitalist than the one which is heavily taxed. Sometimes such a diversion may be desirable and a discriminatory tax of this nature may be justified on social grounds, *e.g.*, a tax on intoxicants. Customs duties cause great diversion of economic resources and may be justified if designed to protect infant industries. But sometimes a tax may cause harmful diversion, *e.g.*, the British rating system which taxes houses at a high rate and has thereby caused a shortage of houses. Taxes on unearned increments and taxes which fall with equal weight on all uses of capital, *e.g.*, a general income tax, do not cause any diversion of economic resources.

The Government can encourage particular industries (*e.g.*, new industries in a developing country) by granting *tax-concessions* to them.

Diversion of capital from one locality to another may take place as a result of specially high local taxation in one place. It has been argued that the British income tax and death duties are so high that

Englishmen prefer to invest in other countries and so capital is driven abroad.

It is probably impossible to impose heavy taxation without at the same time causing some check to production. But if the proceeds of taxation are wisely spent, the consequent stimulus to production may be far stronger than the check to production due to taxation.

Distribution. It is admitted by everybody that the distribution of wealth in all capitalist countries is extremely unequal. J. S. Mill and other economists of the individualist school were of opinion that the state should not interfere with distribution. But according to most modern writers inequality of incomes has become so great that an endeavour should be made by the state to remedy the evil through the weapon of taxation. Taxes imposed with this motive are called *Redistributive Taxes*.

The effect of taxation on distribution depends on the nature of the tax. Proportional Taxes and Regressive Taxes increase inequality of incomes. *Examples*—poll tax, tax on necessities, sales tax.

Taxes on luxuries, on income and on inheritance are mostly paid by the rich. They may be made sharply progressive and are useful weapons for the reduction of inequality of incomes.

Considerations of distribution suggest that most of the revenue should be raised from the richer classes. This, however, may have an adverse effect on production and so taxes paid by the poor should be retained. In order to make the tax-system equitable, the taxes which are paid by the richer classes should be made as progressive as possible. The chief examples of such taxes are the taxes on income, inheritance, expenditure and wealth.

Income and Employment. Taxation takes away money from individuals and reduces their disposable income. The ability to spend and invest is reduced. If Government expenditure is unchanged, increase of taxation reduces the community's aggregate expenditure. The Consumption+Investment schedule is lowered and the C+I line comes down. (See p. 524). As a result, the equilibrium level of employment (shown by E) moves to the left. This means that income and employment are both reduced.

Conversely, if taxes are reduced (Government expenditure remaining unchanged) the disposable income is increased, the C+I line moves up and both income and employment increase.

Changes in taxation are always accompanied with changes in Government expenditure. So the two must be considered together. The latter has an expansionary effect on income and employment. (See under Fiscal Policy, p. 543).

THE PURPOSE OF TAXATION

Raising revenue is not the only object of taxation. Nowadays taxation is used as an *instrument of economic policy*. The various purposes for which taxation is nowadays used, are enumerated below.

1. *Raising revenues*. This is the primary purpose of taxation. Nowadays resources are required not only for the ordinary functions of the Government, but also for development projects.

2. *Protect home industries*. The cost of imported articles may be increased by the imposition of import duties. This will increase the competitive power of the home industries.

3. *Prevent the import of undesirable goods*. The government can impose prohibitive rates of import duties on articles like wines, drugs and luxury products thereby preventing such imports.

4. *Reduce the consumption of undesirable goods*. High excise duties are generally imposed on many home produced articles, like drinks and drugs, for the purpose of raising their prices and reducing their consumption.

5. *To check inflation*. Taxes reduce the disposable income of the people. In times of inflation there is too much purchasing power in the hands of the people. Taxes may be used to take away a part of such purchasing power and thereby reduce the pressure on prices.

6. *To lessen inequality of incomes*. The distribution of incomes in a country is usually very unequal. The inequality can be reduced by taxing the rich at a higher rate. This is known as redistributive taxation.

TAXABLE CAPACITY

Taxable Capacity means *capacity to pay taxes*. The concept has been invented for the purpose of *measuring how much can be collected from the community by way of taxes*.

Dalton distinguishes between Absolute Taxable Capacity and Relative Taxable Capacity. The former deals with the question how much a particular community may be taxed without producing unpleasant effect. The latter deals with the question in what proportion should two or more communities contribute by taxation to a common expenditure.

According to Sir Josiah Stamp taxable capacity is measured by *total production minus the amount required to maintain population at a subsistence level*. This definition is vague because the money required for subsistence varies in different societies. Also, if the whole of this surplus is taken away, production will suffer and future taxable capacity will be affected.

It is impossible to calculate exactly what taxable capacity is. All that we can say is that it depends on certain factors which may be enumerated as follows :

1. The psychology of the people.
2. Distribution of wealth in the country.
3. Standard of living of the people.
4. Nature of the tax system.
5. Nature of the government expenditure.

According to Dalton, taxable capacity is a "dim and confused conception." He says, "Absolute taxable capacity is a myth and should be banished from all serious discussions on Public Finance". According to Findlay Shirras,⁵ however, the concept is of practical importance. "It is always wise and useful for a government to know even roughly the limit that a country can contribute by way of taxation both in ordinary and extraordinary circumstances".

CHARACTERISTIC FEATURES OF SOME TAXES

1. The Income Tax. The income tax is a tax assessed on and collected from the income of a person or organisation. The income tax is a direct tax which can be so arranged as to collect substantial sums from the rich. It is therefore a corrective of, and supplementary to, indirect taxes which are paid mostly by the poor. The income tax is essential in order to secure an equitable distribution of the burden of taxation. As a source of revenue it is elastic and highly productive.

The income tax systems of all countries exempt small incomes from taxation. This is intended to relieve the burden on the poor and to avoid too high costs of collection.

The rates of income tax are always made progressive. In some countries the whole income is taxed at the rate appropriate for that level of income. In others, the income is divided into different parts each part being assessed at its appropriate rate. The latter method is known as the 'slab' system.

The assessee of the income tax is required to submit statements of their income which are enquired into by income tax officials and assessed. The system has not yet been made faultless in any country. Submission of false accounts and evasion goes on everywhere.

The income tax is usually combined with certain other forms of taxation which also are based upon income, *viz.*,

Super Tax—A special tax on high incomes levied usually at rates higher than the ordinary income tax.

Excess Profits Tax—This is a tax on excess profits earned during war-time.

⁵ Shirras, *Science of Public Finance*.

Business Profits Tax—This is an additional tax collected on business profits beyond a certain fixed minimum.

Corporation Tax—The income tax collected from joint stock companies is called the Corporation Tax.

2. Customs Duties. These are duties levied on commodities exported from or imported into a country. The duties may be either specific or ad valorem.

[A *Specific Tax* is a tax based on the physical characteristics of a commodity, e.g., its weight or size. An *Ad Valorem Tax* is one which is calculated on the value of a commodity.]

The object of customs duties is primarily revenue. But they are also used for giving protection to particular industries.

3. Excise Duties. An excise duty is a duty assessed on commodities produced and consumed internally. It may be either specific or ad valorem. Sometimes excise duties are collected through a system of licencing internal production (e.g., the salt duty of India) or through control over the system of distribution (e.g., opium and certain other narcotics in India).

Excise duties on necessities are highly elastic and productive. They make all citizens contribute towards the country's revenue. Excise duties may also be levied for moral purposes, for example as an alternative to prohibition. By raising the prices of certain articles like alcohol and narcotics, through duties, their consumption is checked. But excise duties are highly regressive.

4. Death Duties and Inheritance Taxes. In most countries duties are levied on property passing to heirs upon death. Small properties are exempted. There is considerable variation as regards the procedure of collection. The rates are usually steeply progressive. In some countries (e.g., U.K.) the rates vary according to the nearness of relationship between the dead man and the heir. Distant relations are taxed at a higher rate.

The following arguments can be used to justify death duties :

(i) The incidence of such duties is on the richer classes who have the ability to pay.

(ii) Death duties reduce inequality of incomes.

(iii) Death duties reduce the propensity towards idleness on the part of the heirs of rich persons, because they inherit less.

(iv) The Colwyn Committee of Great Britain pointed out that a death duty coupled with the income tax is a better measure of ability than either alone.

(v) According to Keynes, death duties have a beneficial effect on employment because they promote equality of distribution and thereby increase the propensity to consume.

(vi) Death duties impart a progressive bias to the tax system as a whole.

(vii) Death duties increase revenue and provide funds for development expenditure.

The following arguments can be used against the imposition of death duties :

(i) There are administrative difficulties. Evasions occur through gifts prior to death and investments in movable property, like jewellery, which can be hidden. Such evasions may be countered by the imposition of taxes on Gifts and on Wealth.

(ii) Death duties reduce the incentives to enterprise on the part of the rich. If the rates are low, the disincentive effects are negligible. If the rates are high, there may arise a reluctance to invest. The disincentive effect is counterbalanced by (a) greater government investments and (b) increased consumption expenditure by the poorer classes which promotes further investments.

5. **The Sales Tax.** The sales tax is a tax imposed on expenditure. It is collected from the dealers but is ultimately paid by the consumers and the producers. The tax has become very popular in India because the yield is high. In most of the states of India only retail sales are taxed but there is no reason why wholesale transactions should be exempted. Steps are taken to avoid double taxation. The Constitution of India provides that the sales tax cannot be imposed on essential articles. The sales tax is not expensive in proportion to its yield even though the accounts of a large number of retailers have to be checked. The principal argument against the sales tax is that it is regressive in character. All citizens have to pay the sales tax at the same rate, whatever their incomes may be. The amount paid by a poor man must be a relatively larger part of his income than the amount paid by a rich man.

6. **Income from the Printing Press.** Inflation may be regarded as a method of reducing the consumption of the public by increasing prices. The extra purchasing power, secured by the Government through extra notes issue or creation of credit, is used to obtain goods and services, freed from private consumption by higher prices. Inflation, therefore, operates as a tax on all consumers.

Inflation is generally regarded as the worst form of taxation because it produces many harmful effects.

PUBLIC DEBTS

Classification. Loans taken by public authorities form the Public Debt. Public Debts may be classified in different ways as follows :

1. *Productive and Unproductive :* Productive debts are debts having equivalent assets and producing an income which can be used

for repaying the loan, e.g., loans taken for financing railways and irrigation works. Unproductive debts are debts against which there are no assets, e.g., loans taken to finance a war. Unproductive debts are also called 'dead-weight' debts.

2. *Voluntary and Compulsory* : A compulsory loan is one which certain persons are compelled to make. All other loans are voluntary. During the last war, persons earning excess profits in India, were forced to deposit moneys in excess of what was finally payable by them under the Excess Profits Tax. The money were refundable later and therefore the tax can be called a compulsory loan.

3. *Internal and External* : A loan taken from the nationals of the country is called internal debt. A loan from foreigners is called external debt.

4. *Funded and Unfunded or Floating* : A funded debt is one which is repayable after a long time. Unfunded or Floating debts are short term loans like "treasury bills" or "ways and means advances". The terms are often used vaguely.

5. *Redeemable and Irredeemable* : The former includes debts for which a definite date of repayment has been fixed. The latter includes debts for which there is no definite date of repayment.

6. *Central, State and Local* : This is a classification according to the authority which borrows the money.

Differences between Public Borrowing and Private Borrowing. There is a great deal of difference between public borrowing and private borrowing.

1. A government may raise a loan compulsorily, a private individual cannot.

2. A government loan may be irredeemable or perpetual. There may not be prescribed date for its repayment. A private loan is repayable on demand or on a definite date.

3. A government can borrow internally from its citizens or externally from foreigners. A private individual must borrow from other persons ; he cannot borrow from himself.

4. A private loan transaction may give rise to a credit instrument which can circulate as a money-substitute. The public debt serves the same purpose but to a greater extent. The "near-moneyness" of the public debt has important economic consequences.

5. Private borrowing should be for productive purposes but not necessarily government borrowing. The reasons are (i) the internal public debt constitutes only transfer payments having no real burden and (ii) government expenditure for employment expansion need not be productive, as Keynes points out.

6. A private individual can become bankrupt, not the government.

7. The sources of funds for debt repayment are different. The

government can raise compulsory contributions (taxes) or issue paper money ; private individuals cannot.

The Justification of Public Debts. When should the Government borrow? In former times public debt and private borrowing were both looked upon with disfavour. It was thought that everyone, including the Government, should be free from debt as far as possible. Nowadays a different opinion is held as regards the public debt.

There are some economists who think that it is not necessary to put any limits on public borrowing. Lerner, for example says that, "The size of the national debt is relatively unimportant." He bases his opinion on the assumption that the internal debt is owed by the nation to itself and therefore, has no real burden. It is only external debt which has a burden and should be avoided.

But the internal debt also has some unfavourable consequences. For example, it increases inequality of incomes and wealth, it checks production because money has to be raised by taxation to pay the interest, etc. (See below). For this reason, it is nowadays thought that the Government should borrow only when necessary. The circumstances, under which Government borrowing is necessary and justified, are enumerated below.

1. *Unforeseen Emergencies* : The revenue obtained from taxation cannot be expanded rapidly. So when national emergencies occur, e.g., a war or an earthquake, it is necessary for the Government to borrow.

2. *Short term lag between revenue collection and expenditure* : It takes time to collect taxes. But the Government has to incur expenditure continuously. During the temporary lag between revenue collection and expenditure, it is necessary for the Government to take short term loans. This is usually done through 'Ways and Means Advances' from the Central Bank or by the sale of Treasury Bills to the public.

3. *Economic Development* : Development projects cannot be financed without loans. The money required is too large to be secured by taxation alone. Loans from foreign sources, even though, they are burdensome from the economic point of view, have to be taken when an underdeveloped country starts development in a planned way.

4. *Promotion of Savings* : The public debt benefits the people by providing them with secure investments. Savings are thereby promoted. Government securities facilitate credit operations between private individuals.

5. *Checking Inflation* : During inflation public borrowings can be used to withdraw surplus purchasing power from the hands of the

public and thereby mitigate some of the evils of inflation. Public borrowing has a deflationary effect, provided the money raised is not put back into circulation by increased Government expenditure. In times of depression, the public debt may be partially repaid, so that the disposable income of the people is increased.

Conclusion. Lerner⁶ says, "Taxing and spending, borrowing and lending, and buying and selling constitute the six fiscal instruments of the government. These are the instruments of Functional Finance whose objective is the task of adjusting investment and consumption to give full employment." (See Ch. 34).

THE BURDEN OF THE PUBLIC DEBT

A public debt incurred for productive purposes involves no burden because in such cases there are income yielding assets against the liability, *e.g.*, loans taken for the construction of railways or irrigation works. The interest on such loans can be paid from the income produced by these undertakings and the tax-payer is not affected.

Unproductive loans stand on a different footing. The burden of paying interest and instalments of principal in such cases fall on the tax payer. To assess the burden on such debts we must distinguish between External Debts and Internal Debts.

External Debt. During a given period the *direct money burden* of an external debt is equal to the sum of money paid on account of interest and principal. But the foreigner can only be paid in terms of goods and services. A part of the national income of the debtor country is used up in this way and the resultant loss of economic welfare can be called the *direct real burden* of the debt. The extent of the real burden will vary according to the proportion in which the various members of the community contribute to the required payment. The external debt also produces an *indirect real burden* because money has to be collected, by taxation or otherwise, for the payment of interest and principal. This leads to high taxation which injuriously affects production. Also, the Government is forced to curtail social public expenditure.

Internal Debt. The internal debt involves no *direct money burden* because all transactions connected with an internal debt involve only a transfer of purchasing power from one section of the people to another. There is no transfer of resources from one country to another. But this does not mean that the internal debt has no burden. The transfer of money from one section of the people to another—from the tax-payer to the bondholder—may involve a diminu-

⁶ Lerner, *Economics of Control*, Ch. 24.

tion of economic welfare and therefore a real burden. Dalton mentions the following reasons why *an internal debt has a real burden* :

1. It increases inequality of incomes for it involves a transfer of money from the poor to the rich and from the young and active to the older and the more passive.
2. There is a check to production on account of high taxation.
3. There is a diminution of the social public expenditure.
4. The poor man's ability to work is affected because taxation to meet the debt-charges increases cost of living and thus reduces personal efficiency.
5. So far as the rich bondholders are concerned the desire to work is diminished.
6. The real burden of a loan taken in war time increases in course of time, if subsequently there is a fall in prices and interest rates.

Conclusion. We can conclude that both external debts and internal debts have burdens, although the burdens arise for different reasons. "Burdens of an internal debt are qualitatively and quantitatively different from those of an external debt." (Samuelson).

EFFECTS OF THE PUBLIC DEBT

Economic Effects. Borrowing money by the government-involves transfer of purchasing power from private individuals to the government and a subsequent retransfer of the same to private individuals when the government spends the money. Repayment of the loan involves transfer of funds collected from tax-payers to the bondholders. Both operations, borrowing and repayment, produce various economic effects.

1. *Effects on money-supply* : Loans from banks always increase money supply and are therefore *inflationary* in their effects. When a bank buys a government bond it uses it as collateral security and gets a loan from the central bank. The central bank can treat the bond as part of its assets and issue notes against it. So the volume of note issue expands.

Loans from non-banking sources, *e.g.*, from private individuals, have a *deflationary* effect because when an individual buys a bond his cash balances are reduced and so his expenditure on goods and services tends to fall. This effect will not follow if the bond is purchased from idle hoards.

2. *Effects on the price level* : The effects of the public debt on the price level depends on (i) how the debt affects money supply and (ii) how it affects economic activity. Loans from banks increase money supply and tend to raise the price level. Loans from non-banking sources have the opposite effect. When the volume of the public debt

is large, the greater part of it must come from the banking system ; so a *large debt is generally inflationary* but the inflationary effect may be counteracted by the effect of the debt on economic activity. The expenditure of the moneys raised by loans may increase income, employment, and output to such an extent that there may be no effect on the price level. According to Keynesian analysis, increased expenditure will have no effect on prices so long as there are unemployed resources. After the level of full employment is reached, further borrowing and expenditure will raise prices.

According to Somers⁷ no statistical correlation has been found between the volume of the public debt and the price level and economic activity. According to Allen and Brownlee the public debt has effects on both but the effects are small because the debt services constitute a small part of the budget.

3. *Effects on the rate of interest* : The public debt influences the rate of interest because the government is usually the largest borrower in the market. The money market, particularly the volume of short term funds available, is considerably influenced by the policy adopted by the government as regards debt management. The term debt management means the decision of the government as regards the following : the time of borrowing ; the choice of debt forms ; from whom the debt is to be raised ; the rate of interest ; the time of repayment or the pattern of debt maturities ; special privileges to be granted to the bondholders if any etc. Government policy concerning the above matters may strengthen the money market or weaken it.

4. *Effects on the allocation of resources* : The proceeds of public loans are used by the Government upon investments designed to improve productivity and welfare, e.g., 'irrigation works, roads, railways etc. The resources of the community are used in a way different from what they would have been if all investments were left to private enterprise and initiative. Thus the allocation of resources in the community is changed. Whether the change is for the better or worse depends on how the Government spends the money.

5. *Effects on the pattern of income distribution* : Bondholders are usually rich people while taxes are paid by all persons, rich and poor. Therefore debt services (payment of interest and repayment of principal) involves transfer of money from the poor to the rich and an increase of inequality. The effect can be neutralised by judicious use of the proceeds of the loans. If the moneys raised by borrowing are spent mostly in providing for benefits to the poor, the effect may be reversed and inequality of incomes may be reduced.

⁷ Somers, *Public Finance and National Income*, Ch. 18 and Allen and Brownlee, *Economics of Public Finance*, Ch. XXI.

Dangers of the Public Debt. The ease with which governments are able to borrow may tempt them to use this method of getting money for improper purposes. Extravagance may be encouraged. Loans taken from foreign countries involve a real burden on the country because a part of the national income has to be used for payment of interest and repayment of principal. Foreign loans may also create international complications and wars.

Hart⁸ points out the following dangers of the public debt :

(i) Large debt means high taxation which reduces the incentives to enterprise.

(ii) Because the interest charge is heavy, the authorities are tempted to follow a cheap money policy. This policy weakens the monetary tools of policy enforcement.

(iii) The swollen mass of liquid assets (treasury bills etc.) makes the price level unstable.

Conclusion. If the total public debt is small the economic effects are small and can be ignored. In most modern states, however, the public debt has reached enormous magnitudes and the effects on economic life are serious and far-reaching. To judge the effects, it is necessary to take into account all the aspects of the public debt. Broadly speaking it can be said that the effects depend upon (i) how the money is raised (ii) how the money is spent and (iii) how the debt is managed.

Public debt and interest charges relative to gross national products were in 1973, United States—1.7% and in 1970, U.K.—3.4%. The percentages are small. Modern economists hold that the public debt has no peril to a growing economy.

METHODS OF DEBT REPAYMENT OR REDEMPTION

The ordinary and usual methods of repaying the public debt are as follows :

1. **Utilisation of budget surpluses.** If a surplus arises in any year it may be used for the repayment of the public debt. But a budget surplus is rare. When it occurs it is generally used for other and better purposes. *e.g.*, relief from taxation or development works.

2. **The Sinking Fund.** Sometimes a fund is created into which moneys are put with the ultimate object of using them for debt repayment. Such a fund is called a Sinking Fund. Sinking Funds may be of various types. A Definite Sinking Fund is one into which a fixed sum of money or a fixed part of the national debt is placed every year. An Indefinite Sinking Fund is one in which moneys are put as and when available. If the interest on the money in the fund is added

⁸ Hart, *Money, Debt and Economic Activity*, p. 508.

to it every year it is called a Cumulative Sinking Fund, otherwise it is called a Constant Sinking Fund.

A Sinking Fund is of great value for debt redemption. Unfortunately it cannot usually be kept intact. Finance ministers have a habit of "raiding the sinking fund" whenever in want of money. In some countries there are rules for the establishment of such funds.

3. Conversion. This is a method of reducing the interest charges on a debt. When the market rate of interest falls the government converts loans taken earlier at high rates into loans at lower rates. Bondholders, who do not agree to accept the lower rate, are repaid in full.

In addition to the aforesaid ordinary methods, there exist the following extraordinary methods of debt-redemption :

1. Repudiation. A government can refuse to honour debts incurred by a previous government. This can happen only after revolutions. For example the communists in Russia repudiated all loans taken by the Czarist government. Repudiation is a risky step for it can seriously affect the credit and borrowing powers of the government in future.

2. The Capital Levy. It was proposed after World War I that a special levy should be imposed on all capital, at a progressive rate, so calculated as to yield sufficient moneys to pay off the entire public debt. The advantages claimed for the capital levy are as follows : (i) it results in a quick extinction of the public debt ; (ii) the burden falls on the rich and the war-profiteers who are also the older and the passive part of the community, and relieves the younger men who took active part in the war ; and (iii) the evil effects of high annual taxation to meet the debt charges are avoided. The arguments against capital levy are as follows : (i) there are considerable administrative difficulties involved in the imposition and collection of such a levy ; (ii) a total extinction of the public debt is not desirable in view of the advantages to the public of the government securities ; (iii) the capital levy makes an unfair discrimination between capital owners and professional men having large income but no capital ; and (iv) the levy will give such a shock to the wealthier classes that future savings will be seriously affected.

The Capital Levy was tried in some mid-European countries after World War I, but not with much success. It was not adopted in U.K. because the Colwyn Committee on National Debt and Taxation (appointed in 1923) came to the conclusion that, "even if there was a prospect of a capital levy being well received the relief from debt which it offers would be insufficient to justify an experiment so large, difficult and full of hazard."

INTER-GOVERNMENTAL OR INTERNATIONAL DEBTS

Debts owed by one nation to another arise from (i) forced tributes after wars or "reparations" as they are sometimes called and (ii) loans given for development or other purpose. The payment of reparations and the repayment of loans involve the following difficulties :

1. A sum of money must be raised by the debtor country by taxation or otherwise. This checks industry and diminishes the money income of the people.

2. The money must be transferred from the debtor country to the creditor country in the form of goods and services. This diminishes the available amount of resources in the debtor country and reduces the real income of its people.

3. Since international payments must be made by goods and services, the debtor country must build up an export surplus and the creditor country an import surplus.

4. Sometimes the debtor country cannot build up an export surplus owing to the low level of its productive powers or because it must import essential articles like food and raw materials. U.K. after World War II was unable to pay the sterling balances due to India by goods and services for both these reasons.

5. The creation of an import surplus by the creditor country is generally disliked by it because import of low priced goods from the debtor country affects its internal industries. After World War I, U.S.A. insisted on the payment of reparations from Germany but raised her import duties to prevent entry of goods from that country. This led to what is known as the Transfer Crisis.

A consideration of the aforesaid difficulties makes it clear that it is extremely difficult to get back moneys lent to foreign countries. During the transfer crisis after World War I certain alternative methods of debt repayment were suggested and partially adopted, *e.g.*, (i) transfer of gold and (ii) cession of territories. Neither of the methods can be adopted in times of peace because no country likes to lose gold or territories.

International loan transactions have increased after World War II. International financial institutions have been set up to lend money for development and reconstruction. Repayment of these loans has been arranged on an instalment basis so that there may not be heavy pressure on the resources of the debtor country in a particular year.

WAR FINANCE

To win wars the primary requirements are men and materials. Money is required to obtain both. To provide material for war purposes private consumption must be restricted. This must be the deli-

berate object of war finance—"The fundamental task of war finance is to transfer resources from consumption to the purposes of war." The raising of a given sum of money is only the method by which this transfer is effected. Any scheme of war finance that avoids the restriction of consumption is an inefficient scheme. The choice between different methods of finance is thus not one between methods that impose a greater or less burden of sacrifice of consumption. The amount of sacrifice is fixed by technical factors, viz., the quantity of materials required for armament and munition, the number of men required for military service etc. The only choice is between different methods of distributing the total sacrifice among the different members of the community.

There are three ways of taking goods and services away from the people and giving the government power to command them—(1) Taxation, (2) Borrowing, (3) Inflation.

As between loans and taxes the main arguments in favour of taxation are the following: (i) it checks extravagant and unnecessary consumption (ii) avoids inflation and (iii) avoids the burden of post war taxation to meet the debt charges. The chief arguments against taxation and in favour of borrowing are as follows:

- (i) Modern wars are so expensive that it is impossible to raise all the money through taxation.
- (ii) The tax system cannot be suddenly expanded.
- (iii) Excessive taxation checks production and dries up the sources of capital.

The two methods must therefore be combined. But modern wars are usually too costly to be met by loans and taxes only. Inflation has to be resorted to in greater or less degree.

SHOULD THE BUDGET BE BALANCED?

A. The Orthodox View. According to classical economic theory private business automatically maintains full employment. The Government cannot increase the level of business activity. If it attempts to do so, by incurring large expenses, the following evil effects will be produced:

- (i) Savings will be reduced.
- (ii) Private incentives to production will be adversely affected and the volume of production will fall.
- (iii) There will be inflation.

According to the orthodox view, government expenditure does not produce bad effects only in one case, viz., when the moneys raised by the government are spent exclusively in creating capital equipment. In all other cases, government expenditure produces bad effects.

From the arguments mentioned above, the classical economists deduced the following conclusions⁹ :

- “1. Keep the budget small.
2. Keep the budget balanced.
3. Tax consumption rather than savings.
4. If the deficit cannot be avoided, issue long term bonds.
5. Borrow only for productive investments.
6. Pay off the national debt as fast as you can.”

B. The Modern View. Deficit Financing. According to Keynes and the School of New Economics, the orthodox view that government expenditure should be curtailed and that the budget should be balanced, is unsound in theory and harmful in practice. Lerner, in his *Economics of Control*, observes that the policy of ‘sound finance’ (balanced budgets, low expenditure and a minimum public debt) is based on the fallacious idea that a state should be run on the same principle as a grocery store. He calls this an “unthinking adoption and general application of capitalist mythology.”

According to Keynes, the total public and private expenditure in all modern communities tends to fall short of the amount necessary to maintain full employment. Under such circumstances, if the Government balances its budget by *curtailing expenditure*, unemployment will increase and the economy will move downwards in a spiral of diminishing income and diminishing employment. The proper policy for the Government is to *increase its expenditure* with a view to close the gap between income and consumption or the gap between the expenditure necessary for full employment and the expenditure that actually takes place. If the Government does so, full employment will be secured, involuntary unemployment will be reduced to the minimum, and income and output will be at the maximum possible level.

The funds necessary for increased government expenditure may be secured in three ways—*taxation, borrowing, and created money*. The first two methods increase government expenditure at the cost of private expenditure, for taxes and loans transfer money from private individuals to the state, the spending power of private individuals is reduced and there is no net addition to the expenditure of the community. It follows therefore, that the increased government expenditure necessary to create employment must be financed by *created money*. The government must draw up its expenditure programme without bothering about the expected revenues at the existing levels of taxation. The resulting deficit in the budget is to be met by creation of new money. So long as there are unemployed resources in the economy, the increased money supply will increase employment and

⁹ A sarcastic summary given by E. F. Schumacher in *The Economics of Full Employment*, Oxford University.

not prices. So there will be no inflation. The Keynesian policy is called Deficit Financing or Deficit Spending.

Definition. The meaning of Deficit Financing will be clear from the following quotation.¹ "The term deficit financing is used to denote the direct addition to gross national expenditure through budget deficits, whether the deficits are on revenue or on capital account. The essence of such a policy lies in government spending in excess of the revenue it receives. The government may cover the deficit either by running down its accumulated balances or by borrowing from the banking system (mainly from the central banks of the country and thus 'creating' money)".

Case for Deficit Financing. Creating new money to meet a budget deficit is a practice generally followed during war and other emergencies. It may seem dangerous and inappropriate in times of peace. But Keynes advocates deficit financing as a permanent policy for remedying cyclical depressions and for development purposes. The arguments in support of the policy can be summed up as follows :

1. It is the only effective method of keeping aggregate expenditure in the community high enough to secure full employment.
2. So long as all the available resources are not fully employed, creation of new money will not lead to inflation.
3. It is the only method of financing development in an undeveloped country whose national income is too low to provide adequate resources through taxation and borrowing.
4. Budgetary policy as an instrument of control is reversible. In times of boom total spending may be curtailed by a surplus budget obtained by higher taxation or reduced government expenditure. The surplus may be kept blocked, or, the volume of money may be reduced by destroying some currency notes. Such a policy would automatically result in disinflation or deflation.

The Case against Deficit Financing. It is sometimes said that the policy of unbalanced budgets would make the government bankrupt in course of time and therefore it should follow the policy of prudent and honest persons and balance the budgets. This argument is based on an analogy between private finance and public finance which is incorrect. The internal public debt is, in the last analysis, owned by the country to itself. The money burden of such a debt is nil although there may be some real burden.

There are, however, certain objections to the unqualified acceptance of the policy of unbalanced budgets. They may be summarised as follows :

¹ Report of the National Planning Commission, (First Five Year Plan), p. 59.

1. The internal debt has a real burden in so far as it leads to a transfer of purchasing power from the poor to the rich. The national debt should not therefore be allowed to increase unduly.

2. The policy of unbalanced budget may lead to government extravagance.

3. The government may find it impossible to keep deficit financing within reasonable limits.

4. The possibility of government investments may retard private investment.

5. In undeveloped and underdeveloped countries, expansion of employment is prevented by lack of capital goods and technical personnel. In such countries unbalanced budgets and increased government expenditure will merely lead to rise of prices.

Conclusion. Budgetary policy should be based on an accurate appraisal of the existing resources and a careful enquiry as to whether government expenditure by itself can increase employment. In underdeveloped countries, the Keynesian policy is not fully applicable owing to the existence of too many "bottlenecks". In such countries it is not the quantity of government expenditure which is important but the quality (nature of the expenditure—whether it would develop the basic industries or increase productive power). "Whether deficit financing is desirable or not depends fundamentally on the amount, the environment in which it is undertaken, and the policies that go along with it."² (See pages 547-48).

Safeguards against Deficit Financing. Deficit financing becomes dangerous when it is continued beyond the level of full employment and an inflationary rise of prices takes place. Against this danger the following safeguards may be suggested :

1. The government should keep close watch over the economy for signs of inflation and whenever such signs appear, should reverse the policy of deficit financing.

2. The government expenditure should, as far as possible, be directed towards the development of the productive powers of the community.

3. If the country is a creditor country, and as such entitled to receive payments from a foreign country, it may limit deficit financing during a period to the amount of real resources that it would get from the foreign country during that period. The Government of India followed this policy as regards the extent of deficit financing under the First Five Year Plan—the new money created was limited to the amount of Sterling Balance released by Great Britain.

² Bernstein and others, *Economic Development with Stability*.

BUDGET POLICY

The budget can be used as an instrument of policy for the following purposes :

1. Recovery from depression. (P. 545.)
2. Check inflation. (P. 422.)
3. Reduction of inequality. (P. 267.)
4. Correction or maintenance of balance of payment. (P. 478-9.)

RECOMMENDED READINGS

1. American Economic Association, *Readings in the Theory of Taxation; Readings in Fiscal Policy*.
2. Musgrave, *A Theory of Public Finance*.
3. Due, *Government Finance*.
4. Allen & Brownlee, *Economics of Public Finance*.
5. Samuelson, *Economics*, (8th edition), Chs. 8, 9, 19.

EXERCISES

1. What are the principles which should guide public expenditure?
2. Describe how far public expenditure can be used as a method of attaining maximum social advantage. (Mysore B.Com. '67).
3. Discuss Dalton's principle of Maximum Social Advantage. (C.A. Final, Nov. '72).
4. What are taxes? Discuss the principles that underline the system of modern taxation. (Gau. B.A. '64).
5. Distinguish between (a) Direct and Indirect taxes, (b) Proportional and Progressive taxes. Do you support progressive taxes? Give reasons for your answer. (C.U. B.Com. '68).
6. Distinguish between direct and indirect taxes. Would you always prefer direct taxes to indirect taxes? Give reasons for your answer. (C.A. Nov. '70; C.U. B.Com. '69, '73).
7. Distinguish between direct and indirect taxes. State the advantages and disadvantages of each class. (C.A. Final, Nov. '73).
8. Argue the case for and against (a) loans and (b) taxes as methods for financing economic development. (C.U. B.A. '68).
9. What is meant by "Progressive" taxation? Examine the arguments in favour of such taxation. (C.U. B.Com. '70).
10. Distinguish between 'progressive' and 'proportional' taxation. What are the arguments in favour of progressive taxation. (C.U. B.Com. '72).
11. Define 'taxable capacity.' What are the factors influencing it? (G.U. & D.U. '69; Mysore B.Com. '67).
12. Discuss the principles which determine the incidence of a tax on the sale or purchase of a commodity. (C.U. B.Com. '71; C.A. Nov. '69).
13. Discuss the factors that determine the incidence of taxation. (C.U. B.A. '65; G.U. & D.U. '67; C.U. B.Com. '64, '66).
14. What is the index of ability—expenditure or income? (See C.A. May '72).
15. Comment on the different senses in which the term "ability to pay taxes" has been interpreted. (C.U. B.A. '71).
16. Discuss the legitimate purposes for which public debt may be incurred. (Gau. B.A. '60; Mysore '68; See C.A. May '70).

17. Discuss the effects of public debt on (a) money supply (b) price-level and (c) rate of interest. (C.U. B.A. '69).
18. Comment on the statement that an internal public debt imposes no burden on the community. (C.U. B.A. '65, '66).
19. Argue the case for and against "Deficit financing" as a method of meeting developmental expenditure, with special reference to India. (Mysore B.Com. '68).
20. Under what circumstances would it be desirable to resort to deficit financing? Can you suggest any safeguards to ensure that it does not produce any adverse effects? (C.U. B.Com. '64, See C.A. Nov. '71).
21. Argue the case for or against "sound finance" and "functional finance". (C.A. Nov. '68).
22. Expenditure is a better index of ability to pay than income. Discuss this statement. (C.A. Final, May '72).
23. Discuss the characteristics of a good tax system. (C.A. Final May '73).
24. Discuss the effects of public debt on (a) money supply, (b) price-level and (c) rate of interest. (C.U. B.A. '73).
25. What are the merits and demerits of progressive income taxation? (C.U. B.A. '74).
26. What is deficit finance? What are its effects on price level and employment? (C.U. B.A. '74).

CHAPTER 38

ECONOMIC GROWTH AND DEVELOPMENT

DEFINITIONS

Economic Growth. The term Growth literally means increase of size or magnitude. The term Economic Growth should therefore mean increase in the size or magnitude of (any or all) economic features like number of industries, amount of capital, population, standard of living of the people, the total output of goods and services in the country, etc. Economic growth is associated with the expansion and the increasing importance of features like those mentioned above. The absence of such expansion is decay or stagnation. Moreover, economic growth does not simply imply more end-results ; it implies at the same time changing character of a growing object, viz., an economy. In addition, all increase to connote growth must be sustaining and not cyclical in nature.

Economic Development. The term Economic Development may be used in the same sense as Economic Growth, though some writers prefer to use it in a different sense. They prefer to use the term 'growth' to mean further development of an already 'developed economy', while the other term, 'development' is used by them to describe a shift from an 'under development to a developed economy'.

MEASUREMENT OF ECONOMIC GROWTH

Most of the writers on growth theory think that the best way of studying the problems of economic growth is to focus attention on the total output of goods and services in a country. If more goods and services are produced, more is (usually) available for all and we can say that the country has "grown" from the economic standpoint. Economic growth is therefore best measured by the *rate* at which a country's *real national income* increases.

GNP and NNP. The term National Income (See Ch. 17) in this context may mean either the Gross National Income (GNP) or the Net National Income (NNP). Changes in the magnitude of either of these quantities show how the country is progressing on the economic front. Most of the modern writers on the Theory of Growth prefer to use the GNP for measuring economic growth. There are two reasons for this preference : (i) Figures for the GNP are easier

to secure. (ii) The calculation of the NNP involves accounting for depreciation and obsolescence and there are difficulties in doing so.

It is to be noted that it is the *real* GNP, in terms of goods and services, which is important. The *money* measure of GNP is inadequate because the price level often fluctuates.

Limitations: Although it is the general practice to measure economic growth by changes in the GNP, it is not an absolutely satisfactory method. The reasons are as follows.

1. It ignores the problem of the distribution of the national income. An increase in the magnitude of the GNP is not beneficial to the people if it is accompanied with increasing inequalities of income.

2. The size of the GNP may increase from year to year but if there is an equivalent (or greater) increase in the number of the population, the economic conditions of the people on average remain unchanged (or deteriorate). Such a situation cannot be described as "growth", even though the GNP has increased. This argument justifies the use of the *per capita* national income for measuring economic growth under certain circumstances.

3. Changes in the magnitude of the GNP do not tell us anything about the quality of the goods and services produced. An increase of GNP, accompanied with a deterioration of the quality of the goods and services produced, would reduce consumer satisfaction and should not be described as "growth".

4. The GNP does not include the value of many benefits which people derive from the economic environment. Suppose, for example, that a public park is constructed in a congested locality. This will improve the health and spirits of the people of the locality and they will be better off in the aesthetic sense. But such changes will not be shown in the GNP. Again, many goods and services are produced in a country which are not included in its GNP, *e.g.*, hobby products, unpaid personal services like those of the housewife, etc. Thus the GNP is not an adequate measure of the national output.

Per Capita Income. On account of the defects mentioned above, some writers prefer to use the *per capita* national income for the purpose of measuring economic growth. If, after necessary corrections for changes in the price level, we find that the *per capita* national income of a country has increased, we can reasonably conclude that the standard of living of its people has improved. This can be considered economic growth. Kindleberger¹ says that, "In economic growth the unidimensional measure is national income *per capita*. Economic growth implies an increase in this variable."

¹ Kindleberger, *Economic Development*, p. 1.

Many writers think that the per capita national income should not be used as the *sole* test of economic growth. The reasons advanced are as follows.

1. If population grows at the same rate as the GNP, per capita income remains unchanged. But it is not proper to say that the economy has not developed.
2. According to Kuznets the use of per capita income as the measure of growth conceals the population problem.
3. The per capita income is derived from the GNP or the NNP. Therefore, the defects of the GNP and the NNP (as measures of the national output) are also present in the per capita income figures.

Welfare and National Income. Generally speaking more goods and services are preferred to less. Therefore we can argue that if the real national income increases, people are better off, *i.e.*, economic welfare has increased. This argument can be accepted only with certain qualifications. Economic welfare will not increase with increase of the real national income under the following circumstances :

- (a) If inequality of income distribution increases. In this case the increased national output accrues mainly to the rich and the people as a whole are not better off.
- (b) If there are undesirable changes in the composition of the national output. For example, if the national output increases owing to an increased production of intoxicants, economic and social welfare will be reduced.
- (c) If there is an increase in the real costs of production. For example if a greater output is obtained by lengthening the hours of work people will suffer increased "pains and sacrifices" and welfare will diminish.

Conclusions. Meir and Baldwin, in their book on Economic Development arrive at the following conclusions on the question of the measurement of economic growth : The analysis of economic growth must be centered on the real national income. Having measured the increase of the real national income, we may compare it with population growth for the purpose of finding out whether the standard of living, on average has improved. Figures relating to the per capita national income must be used for this purpose. We cannot equate increase of income with increase of economic welfare (far less with social welfare) without additional considerations. To specify the optimum rates of growth we must make value judgments regarding income distribution, composition of output, tastes, real costs and other changes that are associated with changes in the real national income, for example, the degree of political freedom.

UNDER-DEVELOPMENT

Different countries are at different stages of economic development. Some are rich, with a high GNP and a high per capita national income. Others have a small GNP and a low per capita national income.

It is usual to classify the different countries of the world, on the basis of their national income into three groups : high income countries, middle income countries and low income countries. U.S.A., U.K., Canada and ten other countries are considered to be high income countries. They include about 18% of the people of the world but enjoy about 67% of the world income. Their rate of economic growth is 25 to 30% per decade. The low income countries of the world (India, Pakistan etc.) have a national income of about \$200 or less. They contain 67% of the world population but get only about 15% of the world income. Their rate of economic growth is less than 15% per decade. The rest of the countries, with per capita incomes ranging near about \$1000 are middle income countries (Argentina, U.S.S.R., Italy etc.). This is a rough classification because the figures are changing rapidly. But the relative difference between these groups (as regards the per capita income) has remained more or less the same for a long time.

Per Capita GNP, 1973. In dollars : United States—5980 ; Sweden—4910 ; West Germany—3830 ; United Kingdom—2670 ; Japan—2610 ; Soviet Union—1800 ; U.A.R. (Egypt)—230 ; India—110.

Definition. The low income countries are also called Underdeveloped countries. The prefix “under” implies that these countries have not developed their resources properly and as a result suffer from poverty and a low standard of living. They are in the stage of *underdevelopment*. The people of such countries may resent the use of the term underdeveloped to describe them, just as a poor man will feel aggrieved if he is openly called poor. Economists, however, do not use the term ‘underdeveloped’ in a derogatory sense. They have created the concept of underdevelopment for the purposes of analysing the causes of this condition and finding out methods of remedying the situation. “An underdeveloped nation is simply one with real per capita income that is low relative to the present day per capita income of such nation as Canada, the United States, Great Britain, France and Western Europe generally. Usually an underdeveloped nation is one regarded as being capable of substantial improvement in its income level.” (Samuelson).

Characteristics of Underdevelopment. Underdeveloped countries have certain features which are not found in the developed countries. These features are responsible to a great extent for their poverty.

1. *Economic.* (i) A large part of the national income of underdeveloped countries comes from agriculture and the extractive industries (mining, forestry etc.). (ii) The greater part of the population is engaged in these industries. (iii) Cottage and small scale industries exist. (iv) Large scale manufacturing industries are undeveloped. (v) Agricultural and industrial techniques are of a low level. (vi) Productivity is low. (vii) The pressure of population on the soil is high. (viii) Agriculture is overcrowded. (ix) As the income level is low, the rate of savings is low and capital formation is inadequate. (x) There is unemployment and disguised unemployment in all sectors of the economy (See ch. 34). (xi) The major proportion of family expenditure is on food and other necessities. (xii) Banking facilities are usually inadequate. (xiii) The transport system is undeveloped. (xiv) Marketing is not well organised.

2. *Demographic.* (i) Underdeveloped countries are generally overpopulated. The birth rate and the death rate are both high. (ii) The people suffer from inadequate nutrition and dietary deficiencies. (iii) Public health and sanitary facilities are generally rudimentary. (iv) The greater part of the population live in the rural areas. (v) Towns are underdeveloped. (vi) Life expectancy is low.

3. *Cultural and Political.* (i) In underdeveloped countries literacy is at a low level. (ii) Educational facilities are inadequate. Technical training is not adequately provided for. (iii) Child labour is widely prevalent. (iv) Women generally have a low status. (v) The middle class is weak or non-existent. (vi) The bulk of the population is ruled by custom and guided by religion. (vii) Great inequalities of income and wealth are generally found. (viii) The few rich control the economy. (ix) Even though the income level is low, there is considerable ostentatious consumption.

Comments. The characteristic features mentioned above are not present in the same degree in all underdeveloped countries. For example in India, large scale industries have developed, though not to the extent justified by her resources. There is, however, one happy feature to be found in almost all underdeveloped countries. The people of these countries are intensely desirous of improving their conditions. In many of these countries active steps are being taken for development, for example, by economic planning.

CAUSES OF UNDERDEVELOPMENT

In order to find out the causes of underdevelopment it is necessary to discuss the ingredient of development, viz., population, natural resources, capital formation and industrial leadership or entrepreneurship.

1. **Population.** For economic development there must be labour supply, sufficient in quantity and adequate in quality. In underdeveloped countries we find the first condition satisfied : population is large and the rate of growth of population high. The second requisite is lacking. In such countries the majority of the people are untrained. They can perform only unskilled manual work. This situation is due to the absence of educational facilities. The most important duty of the Government of a developing country is to establish institutions where general and technical training can be imparted. Japan, during the initial years of her development, provided for this requirement not only by establishing educational institutions in the country but also by sending workers abroad for training and by importing skilled workers from abroad for teaching purposes. Most of the underdeveloped countries of the world now are following the example of Japan.

Almost all underdeveloped countries suffer from a population problem. They have more people than they can maintain at a reasonable standard of living. The problem is accentuated as development proceeds. With economic growth, living conditions improve and medical facilities become more available. Thus the death rate falls. But the birth rate remains as high as ever. Therefore population grows at a high rate. Overpopulation produces food scarcity, low per capita income, unemployment and a lower standard of living. In countries like India we find a large volume of disguised unemployment in the agricultural sector which is a consequence of the pressure of population on the land. All developing countries must find a solution of the population problem. The measures that may be adopted include education on family planning techniques.

2. **Natural Resources.** Land and other natural resources are necessary for production. The size of the national income of a country depends on the quantity and quality of the natural resources it possesses. Countries which do not possess adequate natural resources are destined to remain poor. But the possession of natural resources will not necessarily make a country rich. The resources must be properly utilised. For this purpose it is necessary to have capital, technical knowledge and leadership. Many countries having abundant natural resources have remained poor because of the inadequacy of the other ingredients. In agriculture, low productivity is very often due to lack of proper implements, bad methods, and the small size of the cultivated units brought about by subdivision and fragmentation. Agriculture can be made more productive by removing these defects by planned action. In many undeveloped countries the system of land holding requires modification. Feudal types of land ownership, like the Zamindari system formerly existing in India, reduce the incentives

to agricultural enterprise and keep total output low. As the first step towards economic growth such system should be replaced by some better alternative. In all these matters the Government of the country has a great responsibility.

3. **Capital.** Capital plays an *essential* and also a *strategic* role in the process of development. If the capital/labour ratio is increased, productivity will increase and the national income will expand. Higher incomes will increase investment and further raise the national income by the multiplier effect.

Underdeveloped countries suffer from inadequate capital formation. Poverty produces a vicious circle. If the people are very poor they cannot save. Lack of savings prevents capital formation. Lack of capital prevents the expansion of the national income. Thus, "the people are poor because they are poor". Since in all poor countries population grows at a rapid rate and inequality of incomes exist, we find that in the early stages of development in such countries, "the rich get richer and the poor get children".¹

Causes. The low rate of capital formation is one of the main causes of underdevelopment. The low rate is due to a variety of reasons of which the following are important :

(a) *Poverty.* In underdeveloped countries most of the people are on the subsistence level. Their average income is so low that saving is impossible.

(b) *Inequality of Income.* Inequality of income and wealth favours saving. The rich are always in a position to save a part of their incomes. In underdeveloped countries we find considerable inequalities. Usually there are a few very rich families and a very large number of very poor ones. The rich families ought to save and invest, thereby promoting the economic growth of their underdeveloped countries. Unfortunately we usually find a peculiar mental attitude among the rich people in such countries. Following feudal traditions they have a contempt for commerce and industry. They are fond of high living and ostentatious expenditure. Thus their wealth and high incomes are not available for industry and enterprise.

(c) *Unproductive investments:* The investment pattern is distorted in underdeveloped countries. Too much is spent on the purchase of gold and jewellery (e.g., in India). The most favourite form of investment is that on land because it is safe. Risky enterprise are rarely undertaken. Thus economic growth is retarded.

(d) *The "Demonstration Effect"* : (See p. 84). The people of underdeveloped countries are, through books, films and personal contacts, becoming more and more aware of the living standards of the people of rich countries. So they spend on luxuries and comforts much

¹ Kindleberger, *op. cit.*

more than they used to do before. So the propensity to save is much reduced. The trend appears in Government expenditure also. In some underdeveloped countries the Government has undertaken social welfare programmes which only rich countries can afford. Sometimes the Governments of such countries construct buildings and undertake projects more for show than for utility. Such activities lead to wasteful expenditure and productive investment is retarded.

From the above discussion it is clear that underdeveloped countries can rarely depend on their internal savings for financing investments. The only alternative is to *borrow money from foreign countries or get aid from them*. The history of the development of Japan and that of U.S.S.R. (to a less extent) shows that in the early stages they were able to obtain foreign capital for their growth. Many international institutions have now been set up for financing the development of underdeveloped countries. Some of the rich countries *e.g.*, U.S.A. give aid for this purpose. The total amount available, however, is still inadequate as compared to the enormous amounts required. There is also another problem. There is a reluctance on the part of many underdeveloped countries to accept foreign capital on the ground that it will somehow jeopardise their political independence.

4. **Technological change and Entrepreneurship.** Capital alone will not promote economic growth. Underdeveloped countries must replace their primitive techniques of production by modern techniques. The necessary skills must be acquired by education, foreign experience and training by imported technicians.

It is also necessary to have business leadership of the requisite type. In most of the developing nations the Government takes up the preliminary innovational work of development. In Japan many industries were started by the Government initially. In Japan, however, after initiating development, the Government handed over industrial ownership and management to private enterprise and the policy proved to be a great success. In mixed economies (for example, like that of India) the Government sector co-exists with an extensive private sector. The task of initiating new enterprises must be shared between Government and private entrepreneurs. According to Schumpeter the existence of entrepreneurs of a high calibre was the most important factor which brought about the industrial revolution in Great Britain during the early nineteenth century. The development of underdeveloped countries would be expedited if more scope is given to private enterprise.

5. **Social and Political hindrances to development.** Social institutions of some underdeveloped countries retard development. For example, the caste system and the joint family system prevent mobility of labour, distort the occupational structure and prevent economic growth. In some countries the social structure is of the feudal pattern.

A few rich families, with custom bound prejudices and often corrupt, control the economy. They obstruct all innovations. Economic development cannot be initiated until such social obstacles are removed.

Economic growth is closely related to political autonomy. Most of the underdeveloped countries of Asia and Africa were formerly colonies of the European States. They were exploited by the ruling nations. So long as they were in this situation they could not grow properly. For example in India it is only after independence that planned efforts are being made for economic development.

THE STAGES OF GROWTH

Different countries are at different stages of growth. In the world now we find the most primitive economies co-existing with highly developed ones. Rostow¹ has classified the stage of economic development into five categories as follows : (1) Stagnant Situation (2) Precondition to Take Off (3) Take Off (4) Self Sustaining Stage, and (5) the Stage of Large Scale Mass Consumption.

Stagnant Situation. This is the primitive stage when there is no effort towards economic development. The Government and social authorities are antagonistic to changes of any kind, economic or otherwise. So the economy staggers on along the traditional line like agriculture.

Instances of such situation are met in the entire pre-Newtonian world, Chinese dynasties, medieval Europe etc.

Preconditions to Take off. This is the stage at which economic growth just begins. There are three characteristic features of this stage : (i) The rate of productive investment increases from 5% or less of the national income to 10% or more. (ii) One or more substantial manufacturing sectors develop. (iii) Social and political institutions, assisting development, are brought into existence. (iv) The rate of population growth becomes slower. This condition is highly favourable for the ready and continuous absorption of the working force in modernised manufacturing sector. (v) Modern science and technology are applied in agriculture also.

All these changes do not always occur endogenously. These sometimes, occur as a result of external contact with advanced societies. Such contact makes it clear that economic development is not only possible, but socially desirable.

Take Off. This is the period during which the rate of investment increases in such a way that per capita real output rises. The initial increase bring with it radical changes in production techniques

¹ Rostow, *The Process of Economic Growth ; The Stages of Economic Growth ; Economic Journal*, March 1956.

and the disposition of income flows. As a result the new scale of investment and the rising trend of per capita output are perpetuated. At this stage savings increase to about 14% of the national income. This will considerably increase an economy's capacity to mobilise necessary capital from domestic source. This will help in maintaining aggregate marginal capital-output ratio which remains generally high at this stage. A business class emerges. According to Rostow the take off stage lasts between 15 to 25 years. But underdeveloped countries can shorten the period by undertaking judicious programmes of development like generation of electricity, construction of transport and communications facilities, etc.

In the process of development there must be "external economies" *e.g.*, a railroad, social overhead capital etc. Many of these externalities produce increasing returns.

Revolutionary changes in agricultural productivity are very essential for a successful completion of 'Take off'. Because, agriculture with such changes can supply its product and income to the modernised sector. At this stage, social and political institutions ensure a sustained rate of growth.

In a 'Take-off' stage, growth occurs in three leading sectors, *viz.*, Primary Growth Sector, Supplementary Growth Sector and Derived Growth Sector. In the primary sector, a high rate of growth results from innovation or from exploitation of unexplored resources. This rising rate acts as prime mover of expansion of an entire economy. In the supplementary sector, rapid advance occurs in direct response to the requirements of growth in the primary sector. For example, industries like coal, steel, engineering etc., are developed to meet the requirements of railway development.

In the derived sector, growth takes place as a consequence of changes in total real income, population, industrial production etc. For instance, food output expands to meet the demand for a growing population, construction of houses increases to grant shelter to increasing number of families etc.

In effect, growth in the above two sectors is mainly a function of a changed cost-supply condition; whereas, growth in the third sector is essentially a result of changed demand condition.

Self Sustaining Growth. From the take off stage a country in due course passes to the self sustaining stage. When this condition is achieved, the country can carry on economic development without foreign aid or foreign capital. All the ingredients of economic growth are at this stage available in the country itself.

Mass Consumption. This is the final stage. Countries at this stage have developed their productive power to such an extent that the goods necessary for a high level of living are produced in abund-

ance for mass consumption. Per capita real income of people rises sufficiently. As a result, larger number of persons can purchase enough durable consumer goods besides basic food, shelter, clothing and so on. In this stage, the structure of population distribution and of working-force undergo radical changes. Proportion of urban to total population rises steadily and that of office and factory workers to total work-force increases. The overall marginal capital-output ratio becomes low and stable at this stage. In short, a society reaches here technical maturity and intends to build up a welfare state. This is the stage which all developing countries aspire to reach.

THEORIES OF ECONOMIC GROWTH

Economic growth has been analysed by a large number of writers. There are many theories regarding what forces are important in the process of economic growth and how these forces operate.

Theories of growth may be classified into the following five groups:

- (1) Theories of the classical economists, Adam Smith and Ricardo
- (2) The Marxian analysis
- (3) The Neo-classical analysis
- (4) Schumpeter's Theory, and
- (5) Post-Keynesian analysis.

The Classical and the Neo-classical analysis are now considered to be out of date. The Marxian analysis is thought to be oversimplified and also illogical. Current thinking is mostly based on the ideas of Schumpeter and Keynes. The earliest Keynesian model of growth was built up by Harrod and Domar. In recent times a large number of sophisticated growth models based upon the Keynesian equations have been constructed. Brief summaries of Schumpeter's view and the Harrod-Domar model are given below.

SCHUMPETER'S THEORY OF ECONOMIC DEVELOPMENT

Economic growth is a dynamic process. Growth is measured by the real national income. According to Schumpeter¹ the process of growth is not a continuous one. In other words national income does not always increase. It increases and decreases in a cyclical pattern. But each succeeding wave is on a higher level than the previous one. Thus economic development is a discontinuous process. The national income increases by disharmonious leaps and spurts. Schumpeter's development theory is mixed up with his business cycle theory.

In Fig. 76 (p. 550) two business cycles are shown: on the same level. According to Schumpeter, the second wave will be on a higher level, showing that the national output during the second wave will on average be higher than the corresponding points on the previous wave.

¹ Schumpeter, *Theory of Economic Development*.

The upward spurt in the national income occurs when innovations take place. An innovation means the discovery of a new product, a new process or a new market. Innovations results in the exploitation of new investment horizons. Examples are to be found in the Industrial Revolution of Great Britain during the 19th century.

Innovations are introduced by entrepreneurs who recognise new profit opportunities. Thus the entrepreneur is the central figure in the process of development. Usually they get finance from bank credit, though some innovations may be financed by savings from current income. So long as innovation proceeds there is economic growth. The leading entrepreneurs are followed by a large number of imitators, so there is a general condition of prosperity. After a time, when the bank loans are being paid off, depression comes. The depression is accentuated by the decay of the old firms affected by the innovation. After a time a fresh wave of innovation comes and the cycle is repeated. Each new equilibrium is, however, higher than the one from which the growth began. "National and per capita incomes in real terms continuously rise *via* the cyclical mechanism." Cyclical swings are the costs of development under capitalism.

In course of time, according to Schumpeter, the entrepreneurial function will become obsolete, the institutional framework of capitalism will decay and the protecting political strata will disappear. The result will be the capitalism will be replaced by socialism. The difference between Schumpeter and Marx is that according to the former, capitalism is not destroyed by accumulating misery but evolves into socialism by continuing prosperity.

Criticisms. The theory of Schumpeter may be criticised on the following grounds.

1. Schumpeter relies on one particular factor, *viz.*, the process of innovation initiated by the entrepreneur, to explain economic growth. But the nature of entrepreneurship in modern capitalism is different from what is represented in Schumpeter's pure model. It can be argued that his views apply only to the 19th. century development.
2. All writers are not prepared to accept the business cycle theory which is part of his development theory. There may be reasons, other than innovations, for booms and depressions. Also innovations are not always financed by bank credit.
3. Schumpeter's conclusions regarding the ultimate fate of capitalism are not acceptable to all. There are many writers who do not agree with the view that socialism is inevitable.

HARROD-DOMAR MODEL OF ECONOMIC GROWTH

Older development theories (like those of Ricardo and Schumpeter) attempt to lay down what actually happens under capitalistic

development. They seek to explain history and predict the future. Post-Keynesian models of economic growth have a different objective. They want to lay down the conditions that must be fulfilled if the real national income is to grow in a smooth and uninterrupted manner. All these models are expressed mathematically in the form of equations. They are based upon certain assumptions and the Keynesian equations.

The Equations of Harrod¹—Let I , S , and Y represent Investment, Savings and the National Income (=National Output) respectively.

Then $I=S$ and $\frac{I}{Y} = \frac{S}{Y}$.

If ΔY = the addition to the national income or output, it follows that $\frac{\Delta Y}{Y} \times \frac{I}{\Delta Y} = \frac{S}{Y}$

$\frac{\Delta Y}{Y}$ is the ratio between the increase of national output and the original output, *i.e.*, it measures the *rate of growth of output*.

Let $G = \frac{\Delta Y}{Y}$.

$\frac{I}{\Delta Y}$ is the ratio between investment to increase of output, *i.e.*, the *capital co-efficient*. Let $\frac{I}{\Delta Y} = C$.

$\frac{S}{Y}$ is savings expressed as a proportion of the national income.

Let $s = \frac{S}{Y}$.

Then the equation given above can be written as

$$GC = s \quad \dots\dots\dots (i)$$

$$\text{or } G = \frac{s}{C}$$

This is Harrod's first equation. It tells us that the rate of economic growth depends on the ratio between the rate of savings and the capital co-efficient.

Let G_w represent the "warranted rate of growth", which means, "the rate of advance which will give satisfaction and lead to its own perpetuation". Let C be the required capital co-efficient. Then Equation (i) can be represented in the following form :

¹ Harrod, *Towards a Dynamic Economics*, pp. 77-100.

$$G_w C_r = s \quad \dots\dots\dots (ii)$$

$$\text{or } G_w = \frac{s}{C_r}.$$

This is Harrod's second equation. It tells us that to secure the warranted rate of growth, income must grow at the rate of $s \times \frac{1}{C_r}$,

The actual rate of growth G may be different from G_w . If $G > G_w$ then $C < C_r$. There is deficiency of capital and a chronic inflationary gap.

The Equations of Domar¹

Let K be the net productive capacity of one unit of I . Then with investment amounting to I , the net increase in output = KI .

Let α be the propensity to save. Then $\frac{1}{\alpha}$ is the multiplier.

$$\therefore \Delta Y = \frac{1}{\alpha} \Delta I.$$

To maintain and continue full employment, the increase in output must equal the increase in income.

$$\therefore KI = \frac{1}{\alpha} \Delta I.$$

$$\text{or } \frac{\Delta I}{I} = \alpha K.$$

This is the fundamental equation of the Domar model. The left hand side represents the percentage rate of growth of investment. To maintain full employment investment must grow at the annual percentage rate αK .

Illustration : Suppose that $\alpha = 12\%$ per annum and $K = 25\%$.

$$\text{Then } \alpha K = \frac{12}{100} \times \frac{25}{100} = \frac{3}{100}$$

Hence investment and income must grow at the rate of 3% per annum, if full employment is to be maintained.

The conclusion that can be drawn is that full employment cannot be maintained if investment remains constant. In the example given above, full employment can be maintained only if investment increases at 3% per annum. In other words investment must increase at a constant compound interest rate, so long as αK is constant. The investment of "today" must exceed the savings of "yesterday".

¹ Domar, *Essays in the Theory of Economic Growth*, No. 4.

Domar² also proves that if I and I_0 represent investment at the current period and after time period t respectively, then,

$$I_t = I_0 e^{\lambda kt}$$

Assumptions. In the Harrod equations the following behavioural relations are postulated : (i) Saving depends on the level of income. (ii) Investment depends on the rate of growth of income.

In the Domar equations the following assumptions are made : (i) Initially full employment income has been achieved. (ii) There is no Government production and no foreign trade. (iii) There are no lags in adjustment. (iv) The average and the marginal propensities to save are equal. (v) The propensity to save is constant. (vi) The capital-output ratio is constant.

Some of the aforesaid assumptions are only necessary for analytical simplicity and may be dropped. I , Y , and S are defined in the *net* sense, *i.e.*, over and above depreciation.

Conclusions. The main conclusions of the Harrod-Domar analysis are as follows :

1. Economic growth depends on investment. Investment has a dual character. It generates income. It also increases the productive capacity of the economy.

2. The increased capacity will result in unemployment if income does not increase by the requisite amount. What is requisite is determined by the equations. Increase of income and output at the requisite rate produces smooth and uninterrupted growth.

3. The Harrod-Domar equations only indicate the conditions of steady advance. The actual rate of growth may differ from the warranted rate. An actual rate greater than the warranted rate produces chronic inflation. An actual rate lower than the warranted rate produces chronic deflation.

4. Deviations from the path of steady advance produce business cycles.

Criticisms. The Harrod-Domar model suffers from certain defects.

1. The analysis is too formal. There is no explanation of the structural features of growth.

2. The equations of the model deal with aggregates. The aggregates may be broken down into their component parts. No attempt has been made to do so.

3. The effects of price changes are not analysed.

² Domar, *op. cit.*, No. 3.

ROLE OF THE GOVERNMENT IN ECONOMIC DEVELOPMENT

The Government can increase the rate of growth of an economy in many different ways. Active participation by the Government is of crucial importance for the development of underdeveloped countries and also for maintaining growth in developed countries.

Nowadays very few people believe in the doctrine of *laissez faire*, which says that the development of a country should be left to private enterprise. (See p. 340). Even in the United States, the Government takes measures for overcoming recessions and controlling booms.

The measures that may be adopted by the Government for the economic development of a country are enumerated below.

1. **Maintaining employment at high levels.** Raising the level of employment raises income and output. In underdeveloped countries we find considerable unemployment, including disguised unemployment. If more work is created for the people, output increases and the people are able to get more goods to consume. Thus the level of living is improved. For this purpose the Government should follow the appropriate monetary and fiscal policy. (See Ch. 34).

2. **Capital formation.** In a mixed economy, the government can promote capital formation by following "an expansionary monetary policy combined with an austere fiscal policy".¹ An expansionary monetary policy will lead to a "deepening of capital", which means creation of capital assets of new kinds (and not merely duplication of existing varieties of capital which is called "widening of capital"). When interest rates fall and credit is easily obtainable, profit horizons expand and new investments are undertaken. Therefore, a larger part of the national income is shifted from consumption to investment, than before. As a result of the expansion of investments, the national income increases cumulatively through the multiplier effect.

An expansionary monetary policy may create an inflationary gap which will nullify the benefits obtained from increasing employment. In this situation, the Government should follow an "austere" fiscal policy. This means that Government expenditure should be reduced and taxes should be raised. By a suitable combination of monetary and fiscal policy full employment may be achieved without inflation.

In an underdeveloped economy it may not be possible to expand employment and increase capital formation only through monetary and fiscal policy. In such countries there are bottlenecks which prevent expansion of investment, even when money and credit are easily available. Shortage of machinery and lack of technical skills are two of the principal obstacles. For these reasons purely Keynesian policy

¹ Samuelson, *Economics*.

prescriptions are not of much value in underdeveloped countries. (See pages 547-8).

3. **Improving the quality of the population.** Various methods can be adopted to improve the technical efficiency of the labour force. Educational facilities, both general and technical, should be expanded. Selected workers should be sent abroad for training. Skilled engineers and scientists should be imported to give training to workers. Provision of good housing and other welfare measures would improve living conditions and make people more efficient.

As regards the *quantity* of the population, underdeveloped countries have a problem. Most of them suffer from overpopulation. The problem becomes more acute as development proceeds. With improvement of sanitation and medical facilities, the death rate goes down and the rate of growth of population increase. Under-developed countries must find a solution of the population problem, through education on family planning and other methods. (See pages 33-4).

4. **Increase of Information.** The Government should assist research by private organisations and should itself set up research organisations. In underdeveloped countries industrial research is particularly important because thereby they can find out what the developed countries already know.

5. **Economic Planning.** For tackling the problems of underdevelopment in a well co-ordinated way it is necessary to act according to a plan. The example of U.S.S.R. shows that by following the appropriate type of planning a backward agricultural country (which U.S.S.R. was in 1928) can be converted into a strong industrialised country within a comparatively short period of time.

6. **Miscellaneous.** There are many other measures which the Government can adopt for the purpose of promoting development. The Government should instal and operate power stations, expand transport and communications facilities, and establish basic and key industries. In developed countries like the U.S.A. such industries are undertaken by private enterprise. In underdeveloped countries, however, there may not exist entrepreneurs with sufficient ability and capital to establish such industries. In such cases the Government must itself undertake such enterprises. The Government should check inflation and prevent adverse balance of payments. It should maintain law and order and an honest administration.

PLANNING FOR BACKWARD AREAS

Planning for the development of underdeveloped countries has received considerable attention in recent times. Planning for such countries can be justified on the following grounds :

- (a) The economic prospect of a rise in the standard of living.
- (b) The non-economic objective of progress in power and defence.
- (c) Foreign capital in such areas represent a combination of capitalism and imperialism. Development is necessary to prevent the exploitation of the inhabitants of these areas.

(d) Without planning the development of such areas is impossible.

Difficulties. Planning for undeveloped countries present many difficulties.

1. Lewis¹ points out that planning requires "a strong, competent, and incorruptible organisation"—a thing which backward countries lack. Therefore, in such countries the first objective of planning would be to create the necessary administrative machine and in the meantime not to take up too many tasks. "The quantity and forms of planning should be limited strictly within the capacity of the machine."

2. One of the pre-conditions of economic development is that the government must perform adequately certain essential functions, *e.g.* maintenance of order, provision of facilities for education, health etc.

3. Finance is a great handicap. Finance may be secured either from foreign loans or from internal savings. The latter method usually involves restriction of consumption which is not liked. Therefore in most countries attempts are made to combine the two methods.

4. Various forms of controls are necessary to secure adequate capital formation.

5. Usually there is a lack of technical knowledge. Suitable steps are needed for adequate skill-formation.

6. It is necessary to create a popular enthusiasm for economic development. According to Lewis, popular enthusiasm, "is both the lubricating oil of planning and petrol of economic development—a dynamic force that almost makes everything possible."

BALANCED GROWTH

The term 'Balanced Growth' is capable of many different interpretations. Sometimes people use it only to denote a "well-formulated plan" or "carefully co-ordinated projects". Sometimes it is used to mean growth in all directions simultaneously, *viz.*, the different industries, agriculture, transport, etc. Balanced growth may also imply that if any particular industry is comparatively underdeveloped, special efforts must be made to pull it up to the level of the other industries. In discussions on Indian planning the concept has been used as an argument in favour of giving priority to agriculture because in India agriculture is backward as compared to industry.

¹ Lewis, *The Theory of Economic Growth*.

Types of Balance. Economists who want balanced growth have argued in favour of the following types of balance.

1. *Balance in Supply*: Balance in supply is necessary for the expansion of external economies. (See p. 61). Development of the basic heavy and chemical industries, transport and communications, and electric power reduces the cost of production of other industries and makes them more efficient. Education usually serves the same purpose. If these industries (and educational facilities) are inadequately developed, high priority must be given to investments on them.

2. *Balance in Demand*: Nurkse¹ is of opinion that in an underdeveloped country a large number of consumer goods industries must be started simultaneously. A single consumer goods industry will find it difficult to sell its product because only a small part of the income of the workers employed in that industry will be spent on the purchase of the product. This argument is not acceptable because it fails to take into account possible foreign markets. There is, however, some truth in the idea of balance in demand. As the income level is low in underdeveloped countries, priority should be given to those consumption goods industries which produce goods of mass consumption at low prices (e.g., basic foodstuffs, cheap clothing). It is not proper to invest on high cost luxury items.

3. *Balance by Sectors*: Lewis² places great emphasis on sectoral balance. "The secret of most development problems is to maintain a proper balance among sectors." There must be balanced development of all the sectors of the economy. If one sector, for example transport and communications, is comparatively undeveloped, it will retard the development of the other sectors. If agriculture is undeveloped, the factories will not get raw materials and the factory workers will not get food. Food and raw materials shortage may be met by imports, as shown by Great Britain during the 19th century. But underdeveloped countries are usually never able to export manufactured goods in quantities sufficient to enable them to import food, raw materials and also capital goods. Therefore, if the agricultural sector is backward priority must be given to its uplift.

From the above discussion it will appear that the problem of balanced growth ultimately involves the question of priorities in investment. To make balanced growth possible, the backward sectors must be improved at a rapid rate. What sectors are backward must first be found out. Then, more investments are to be made on them. It is also necessary to determine the *extent* of the priority to be given, i.e., what percentage of the total planned investment is to be devoted to each backward sector.

¹ Nurkse, *Problems of Capital Formation in Underdeveloped Countries*.

² Lewis, *The Theory of Economic Growth*.

PLANNING MODELS

Economic planning may have two types of basic objectives and techniques. One is planning with unbalanced growth, while the other is planning with balanced growth. The U.S.S.R. model represents the first type and the French and the West German models represent the second. The main features of these models are discussed below.

(1) *The Soviet Planning Model : Directional Planning* : From the very time of the First Five Year Plan, the Soviet Russia has been following the technique of planning with unbalanced growth. In the First Plan major portion of planned investment was on the heavy industries, while the minor portion was on consumer goods industries. Gradually, investment was increased. As a result, the expansion of industries producing consumer goods was much restricted ; the people, for the shortage of such goods, had to curtail their consumption heavily. Naturally, in the present socio-economic structure of India, it is neither desirable nor possible to follow the model. Yet, the utility of the basic approach of the technique can be recommended. Following the technique Russia was successful in bringing about the high level of economic development.

The problem, next to that of choosing a planning technique, is the problem of resource allocation among various industries and sectors. Russia solved this problem through 'Balance Sheet Planning'. The task of resource allocation was performed through various stages. At the first stage, total resources were allocated in heavy industries, defence industries etc. At the next stage, the allocation was subdivided among branches subsidiary to the above industries. It may be mentioned that in Russia, the decision whether a particular industrial project will be taken, depends on two considerations : first, the cost, of production will be minimum and secondly, the available resources will be immediately utilised in such projects. Projects are thus, selected by the relative utility measure of investments.

Proper formulation and implementation of such planning technique with unbalanced growth, require a central planning organisation. This organisation must have an ultimate control over planning matters. The State also needs some rigid control over consumption and allied activities. Such control is absolutely essential for the success of the plan. In the social set-up of Russia the supreme authority and control of the state proved to be a boon in the planning matter. This however, raises a difficulty whether in a mixed economy, the Soviet model is appropriate or not.

(2) *The French Planning Model: Indicative Planning*. The French Planning technique furnishes an instance how planned economic development can occur, without a central planning authority or without a

rigid state-control in an advanced capitalistic economy. So the French Plan is adopted through the following stages and process.

(a) In France there is a central planning bureau. The number of its members is however, limited and it has no power to arrive at the final decision on formulating a plan.

(b) A draft plan is at first, jointly drafted by the central planning bureau and the economic wing of the finance ministry. A growth rate as a target of any forthcoming plan is indicated therein. In the light of the aforesaid target, the staff of the planning bureau makes an estimate of total production, and thereafter, of total investment outlay, government expenditure and balance of payment position of foreign transaction, according to total production in different industries.

(c) Thereafter, targets of production in various industries are fixed accordingly. The draft containing these various estimates is then discussed at twentyfive commissions and at a number of advisory committees. These advisory committees consist of owners, labour representatives and technical and other experts of industries.

(d) Even after all such discussions, the targets of production, may, even the proposed growth rates in various industries, be altered. The main point of consideration at the meetings of such advisory committees is, whether the growth on the basis of internal resources at the proposed rate can in effect, materialise or not.

(e) Subsequently, the draft along with the various suggestions and comments thereon, is sent back to the planning bureau and the staff of the bureau then gives it a final shape.

(f) Implementation of the finally formulated plan requires no direct state-control. Yet it needs some indirect assistance, financial and other. These assistance are given only to the industries willing to co-operate in attaining the planned targets.

Unlike the Russian planning model, the French model is not directional and not compulsory. It relies for its implementation on voluntary participation of a number of private industries and organisations. So, it is called a harmonious cooperative planning model for balanced growth.

As to the merit of the French technique, it can be claimed first that the actual rate of growth under this technique may be higher. The reason is obvious: the implementation of the plan does not depend on state intervention from the top, but does depend only on willing cooperation of a number of private enterprises; the mutual discussions and consultations among owners, workers and others related to the plan. It increases enthusiasm and enterprise of all concerned.

It can be claimed that such a plan leads to a fuller and more satisfactory utilisation of the limited indigenous resources. As the targets are fixed on the basis of suggestions and cooperation of all, a

proper allocation of essential industrial materials will be possible. It may accelerate the rate of growth and make it more regular and orderly.

The technique is not free from some theoretical defects. First, the plan may receive majority support in its favour, but scepticism and criticisms of the minority of the plan may remain. Secondly, the utility of this model is highly debatable for semi-developed countries. In those countries, a strong bias and leaning for a planning with unbalanced growth generally persists.

(3) *The West German Decentralised Planning Model*: As a reaction to many pitfalls, theoretical and practical, in the French Model, West Germany has recently been experimenting with decentralised planning. In this model, decision making is dispersed among competing economic units. As a result, the fortunes or lack of these, of a whole trade, or of a whole industry, or of an entire region in this uncertain world do not hinge upon the judgment of a single decision maker authority. The West German's model thus, tries to create (without setting up production targets or guidelines) an economic climate suitable for competition and profitability.

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2. Kindleberger, *Economic Development*.
3. Meir and Baldwin, *Economic Development*.
4. Samuelson, *Economics*. (9th edition), Chs. 37; 38.

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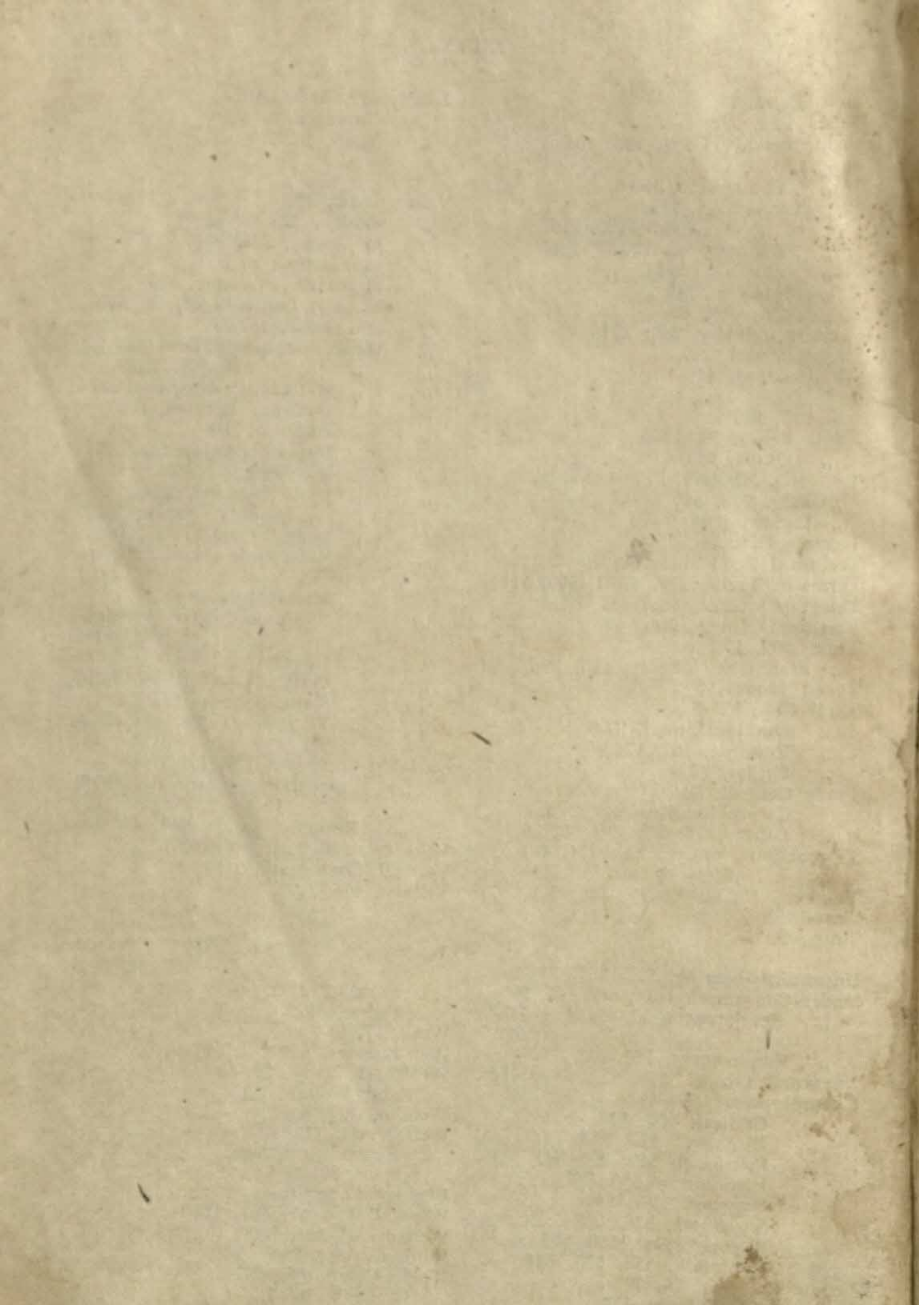
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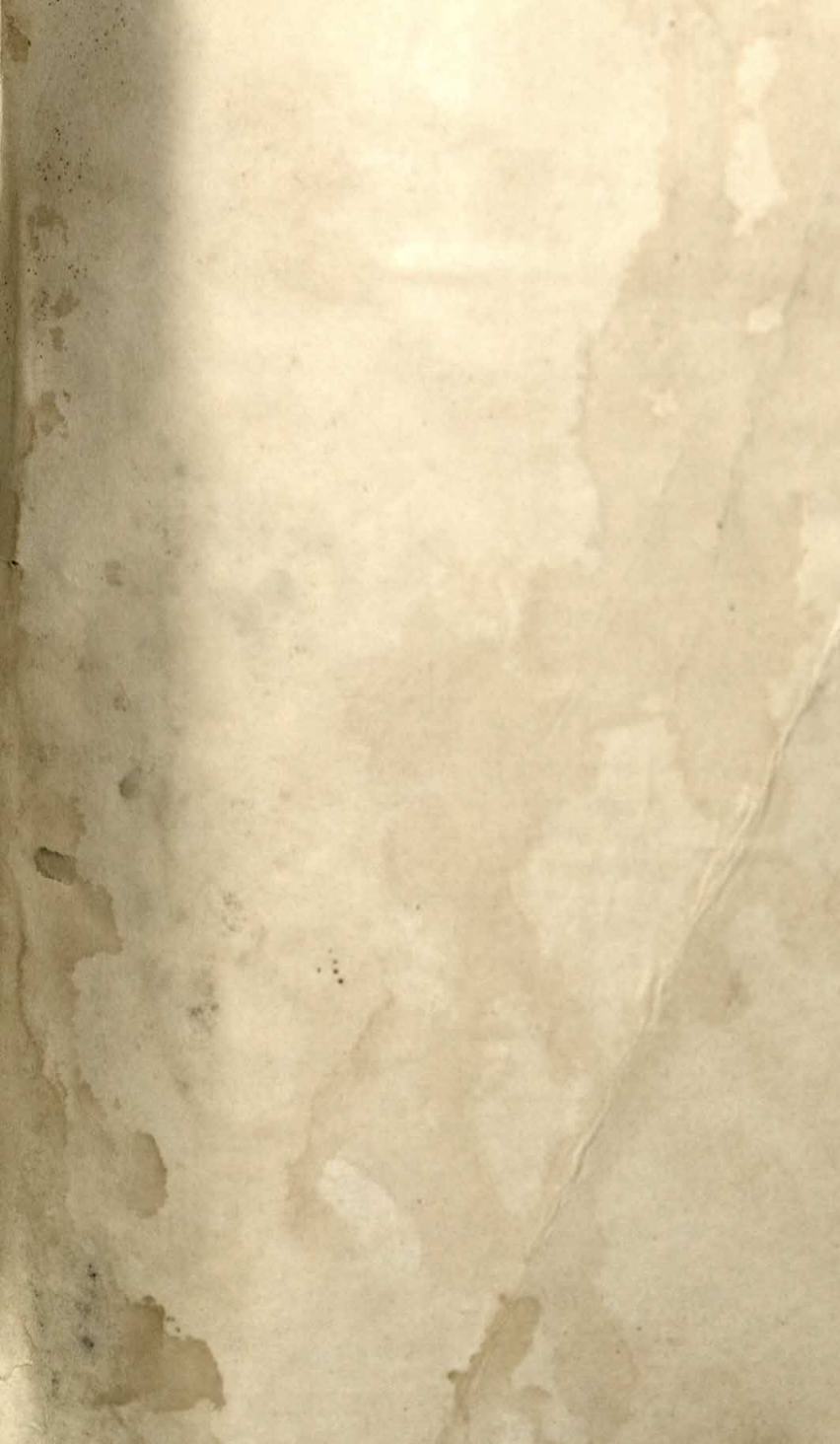
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